FACTORS THAT PREVENT FEMALE STUDENTS FROM ENROLLING IN TECHNOLOGY EDUCATION COURSES AT RICHFIELD SENIOR HIGH SCHOOL

by

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ABSTRACT

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We live in a society that is inundated with technology. Projections suggest that the rate of technological developments will continue to increase as we move forward in the 21st century. Educational leaders stress the need for all students to prepare for life in a technological society, which can be accomplished by participation in technology education courses. Unfortunately, most female students do not enroll in these courses.

The purpose of this study was to determine what factors contribute to the reluctance of female students to enroll in technology education courses at Richfield Senior High School. The factors that were identified and used within the questionnaire to measure student responses were: a) sense of self and social fit factors, b) guidance counselor factors, c) role model mentor and peer factors, d) curriculum and instruction factors, e) classroom climate factors. The instrumentation for this research surveyed students in grades 9-12 at Richfield Senior High School regarding their perceptions of technology education courses. The sample consisted of 400 students with a return rate of 90.5%.

The results of this research indicated the following: a) female students lack support from influential individuals such as parents and peers when it comes to pursuing interests that are non-traditional for their gender, b) male students receive more encouragement and information from guidance office staff concerning technology education courses when compared to female students, c) female students have a fear of being the only member of their gender in the majority of technology education courses, d) technology education labs are perceived to be dangerous and dirty places by female students, e) most students at Richfield Senior High School do not view technology education courses as environments where real world problems are solved, and f) after graduation, the majority of students at Richfield Senior High School plan on pursuing a university education which causes them to focus on core curriculum courses during their high school career.

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CHAPTER I

INTRODUCTION

Background of the Problem

As we move forward in the 21st century our lives become more dependent on technology. To be a contributing member of society it is essential to be able to use technology to solve problems. Technology education courses teach students how to solve problems, think critically, and develop life long skills necessary for informed decision making in the 21st century. The International Technology Education Association (1996) stated that technology education courses should be made available to all students. Both male and female students must be prepared for a future that will greatly depend on technology. Unfortunately, most female students choose not to enroll in elective courses that have the potential to prepare them for the technological world in which we live.

Technology education courses prepare students for the future, which is continuously evolving and driven by technological advancements. Some technology teachers are teaching students how to solve problems and evaluate the results in a systematic fashion that is essential in today's constantly changing technological world (Bjorkquist & Zuga, 1989). Flowers (1998) expressed that technology education courses provide students with much more than general knowledge of small engines or how to build a wall. Technology education courses are required to become a technologically literate student, consumer, and citizen. Successful individuals within society can evaluate technical situations, make informed decisions, and evaluate their decisions.

In the 21st century all members of society need to posses problem solving skills. Problem solving skills can be strengthened in technology education courses. Students in technology education courses learn to use tools and machinery, but also are introduced to hands on projects that demonstrate ways to approach new situations, apply their knowledge, and solve problems (Silverman & Pritchard, 1996);(Zuga, 1989). Skills taught in traditional technology education courses such as metalworking, woodworking, construction and drafting are all necessary for students to compete for employment positions in the competitive and technologically driven 21st century (Johnson, 1997). If these skills are beneficial to all students, why are so few female students enrolled in technology education courses?

Why is it that so many female students have a reluctance to enroll in subjects such as math, science, and technology? Research of math and science courses in schools has created identifiable factors that contribute to female disinterest. The study of why almost all female students disregard enrolling in technology education courses has been given minimal attention (Silverman & Pritchard, 1996). Even though traditional "industrial arts" programs with courses such as woodworking, metalworking, and engines were male dominated (Cummings, Hill, & Zuga, 1998), technology education courses today, could and should be more appealing, interesting, and beneficial to female students. Upon conclusion of this research, rationale will hopefully be evident concerning why so few female students enroll in technology education courses at Richfield Senior High School.

Approximately 1,500 students in grades 9-12 are enrolled at Richfield Senior High School in Richfield, Minnesota. Technology education courses offered include architectural design, technology lab, photography, television and video production, woods, metals, and small engines. Despite the variety of courses that are offered, Richfield Senior High School records reveal that female students have consistently represented only 4% of the student population enrolled in technology education courses. Therefore, there is a need to uncover the factors that influence female students to not enroll in technology education courses.

Statement of the Problem

We live in a society that is inundated with technology. Projections suggest that the rate of technological developments will continue to increase as we move forward in the 21st century. Educational leaders stress the need for all students to prepare for life in a technological society, which can be accomplished by participation in technology education courses. Unfortunately, most female students do not enroll in these courses.

Research Questions

This study will strive to address the following research questions.

1. What role model, mentors, and peer factors contribute to the reluctance of female students to enroll in technology education courses at Richfield Senior High School?
2. What guidance counselor factors contribute to the reluctance of female students to enroll in technology education courses at Richfield Senior High School?
3. What socialization factors contribute to the reluctance of female students to enroll in technology education courses at Richfield Senior High School?
4. What classroom climate factors contribute to the reluctance of female students to enroll in technology education courses at Richfield Senior High School?
5. What curriculum and instruction factors contribute to the reluctance of female students to enroll in technology education courses at Richfield Senior High School?

Significance of the Study

Richfield Senior High School has consistently had low female enrollment numbers in technology education courses. All students can benefit from learning about technology. The results of this study will hopefully increase female enrollment in technology education courses by informing female students and individuals who influence female student decisions.

Professional staff members at Richfield Senior High School may also find this study useful in developing strategies to increase female enrollment in technology education courses. This study may also provide a basis for which technology education teachers may continue research on this topic.

Limitations of the Study

1. The population being surveyed consists within Richfield Senior High School, in Richfield, Minnesota.
2. The population being surveyed is limited to a sample of students from each grade (9-12).
3. The results of the study can only be applied at Richfield Senior High School.
4. The school being researched is located in an urban mid-western region.
5. The survey instrument that was developed may not clearly interpret the factors that prevent female students from enrolling in technology education courses.
6. Portions of the sample population may not complete the survey instrument.
7. Respondents may not complete the survey instrument honestly.
8. The time of day that the survey instrument is administered may affect the quality of student answers.

9. The survey instruments must be distributed, completed, and returned in a relatively short period of time.

Assumptions of the Study

This study assumes that:

1. Professional staff members at Richfield Senior High School are not actively discouraging females students from enrolling/participating in technology education courses.

2. Participants of the study put forth an honest effort when they completed the survey instrument.

3. Participants were familiar with the technology education program at Richfield Senior High School

Definition of Terms

Classroom Climate Factors: The physical characteristics of a classroom or laboratory such as safety and cleanliness that affect the attitudes, perceptions, and actions of students, their peers, and teachers.

Curriculum and Instruction Factors: A discernment that technology education courses do not provide meaningful and beneficial educational experiences to solve real world problems but only opportunities to tinker with tools and materials.

Guidance Counselor Factors: Information concerning occupations and further education that is disseminated to students.

Industrial Arts: The study of the changes that have been made by man in the forms of materials to increase their values, and of the problems of life related to the changes (Bonser, 1925).

Professional Staff: A reference to administrators, teachers, and guidance counselors at Richfield Senior High School.

Role Model, Mentor, and Peer Factors: Young people conform to the interests and seek the approval of parents, individuals they admire, and members of their peer group.

Sense of Self and Social Fit Factors: Young people make decisions based upon what is acceptable for their gender or peer group in an attempt to blend in with societal norms and values.

Technology: Human innovation in action that involves the generation of knowledge and process to develop systems that solve problems and extend human capabilities. The innovation, change, or modification of the natural environment to satisfy perceived human needs and wants (ITEA, 2000).

Technology Education: A study of technology, which provides an opportunity for students to learn about the process and knowledge related to technology that are needed to solve problems and extend human capabilities (ITEA, 2000).

Technological Literacy: The ability to use, manage, assess, and understand technology (ITEA, 2000).

Methodology

A quantitative survey instrument was used to collect descriptive research data concerning factors that prevented female students from enrolling in technology education courses at Richfield Senior High School.

CHAPTER II

REVIEW OF LITERATURE

Introduction

This review of literature will focus on five main categories of factors that contribute to the reluctance of female students to enroll in technology education courses. The five main categories of factors include sense of self and social fit, messages from counselors, role models, mentors, and peers, curriculum and instruction, and classroom climate. Furthermore, this chapter will provide background information regarding female student enrollment in technology education courses at Richfield Senior High School.

Relatively few members of society realize that current female students continue a three-hundred-year old struggle for full participation in America's schools (Sadker & Sadker, 1994). Male students typically control classroom conversations, ask and answer more questions, receive more praise for their ideas, get criticized, and receive more help from teachers when confused compared to female students (Sadker & Sadker, 1994). Why do males dominate classrooms within American schools? More importantly, what can be done to improve the quality of education that female students receive?

Richfield Demographics

The city of Richfield has 35,000 residents and is considered an urban area due to its proximity of Minneapolis and St. Paul. The student population of Richfield Senior High School consists of 1,500 students and is approximately 72% Caucasian, 12% African American, 9% Latino, and 7% Asian (Richfield Senior High School Administrative Records, 2001). The high school demographics are similar to those of the community.

Need for Technological Literacy

The 21st century is an era of exponential technological advancement. Current society has become more dependent on technology in contrast to any other epoch in history. Regardless of occupation or geographic location, technology continually impacts and regulates our lives. Individuals who are technologically literate are able to use, manage, assess, and understand technology. Unfortunately, a large percentage of American citizens have entered the 21st century technologically illiterate. Many middle-aged or older citizens claim that they are deficient in technological know-how due to the lack of technological exposure as a child. It is essential that young people are introduced and immersed in technology to facilitate their preparation for the future.

The importance of preparing today's students to be competitive in a technology-based society is apparent. Regardless of whether students attend a rural, suburban, or inner city school system, their future success in the job market or in higher education is directly correlated to the student's capability to use and understand technology (Thode, 1989). Technology education courses focus on student problem solving, which will prepare them for a successful future (Thode, 1989). The demand for technological literacy escalates each year as technology and our dependence on it advances. Employers, policy makers, and educational leaders have come to consensus that all citizens need to be technologically literate in order to succeed in today's world. (Satchwell & Dugger, 1996). The preeminent method for young people to acquire technical knowledge and abilities at the national level is through our schools (National Research Council, 1996).

Sense of Self and Social Fit

From the beginning of human civilization males and females have been assigned roles to perform within society to maintain balance and conformity. Most males were responsible for hunting, gathering materials and constructing shelters, designing and fabricating tools, and passing on survival knowledge to young men. Most females were accountable for nursing the young, preparing harvested food, and fashioning clothing. These responsibilities and expectations determined for each gender are representative of societies from hundreds and even thousands of years ago. Many of us are curious about where these gender assigned responsibilities originated? Also, how has gender equity been unable to evolve over such an extensive period of time?

Children become conscious of their surroundings and individuals within their environment at an early age. By age three, children begin to develop an attachment or separation from the mother who is characteristically the primary care giver. Girls typically gravitate towards their mothers; on the contrary, males attempt to display their masculinity by separating from their mothers (Welty & Puck, 2001). Parents contribute to gender identity through toys, colors, and activities. Baby boys are typically raised in an environment dominated by the color blue, and the color pink surrounds baby girls. Research suggests that social environments have a tremendous impact on children's play preferences, learning abilities and temperaments (Brannon, 1999). Essentially, society instructs our girls how to act like girls and boys how to act like boys (Swanson & Miller, 1998).

Boys and girls are obviously different from a physical perspective and our culture anticipates that they will participate in activities that correspond exclusively to their gender. Girls will be partial to reading while boys enjoy mathematics; girls participate in tea parties and boys play with toy trucks. Children begin to further their understanding of gender differences and gender roles when they begin to interact with toys (Eisberg, 1993). Boys frequently interact with toys that disassemble and reassemble, are electronic, and work as a system. It appears evident that toys designed for males introduce technological concepts at a young age. Toys designed for females predominantly focus on domestic activities and are designed to emulate family and social situations (Welty & Puck, 2001). In a study that was conducted by the Center for Children and Technology, in New York City, researchers asked both male and female technical experts to imagine future technological developments in their field. The results pertaining to perceptions concerning future technologies were strikingly different. The majority of females envisioned devices that would connect people, improve communication and collaboration, integrate public and private lives, and improve on existing technologies. Male respondents imagined unlimited power, tremendous speed, ultimate knowledge, and technological equipment advances (Koch, 1994). Is it reasonable to hypothesize that male responses can be attributed to the exposure of technology and technological systems at an early age which creates a need for extreme technological advances and innovation?

The gender identity of a child is greatly influenced by his or her parent's interactions (Morgison, 1995). Parents commonly make assumptions regarding activities that are appropriate for either their son or daughter to participate in. Research shows that girls are being left behind in the culture of technology at an early age. Both men and women generally consider technology part of the "male world", similar to working on cars and playing football (Swanson & Miller, 1998). The majority of young females because of parental opinion frequently accept the perception of technology as a male endeavor. It is socially acceptable for a female to demonstrate a lack of interest in technology, and female students generally are not encouraged to do otherwise. Conversely, we expect males to operate machines with ease and explore technology, and we encourage them to do so from an early age (Swanson & Miller, 1998). Parents are also accountable for encouraging their children to pursue traditional career paths instead of subjects that genuinely and individually interest them (DuVergue, 1996). Research has proven that parents typically purchase technology twice as frequently for their sons as their daughters (Swanson, 1998).

Gender stereotypes that are part of general society also frequently appear in school classrooms and laboratories in the United States (Whitehead, 1996). Course offerings that are thought to be feminine are considered acceptable for female students because of the focus on human interaction and domestic occurrences. Similarly, male students are expected to enroll in courses that will display their mechanical aptitude and ability to use machinery. Language, arts, and humanities classrooms, where teachers and students are typically female, consistently use computers less frequently compared to classes that are primarily male (Swanson & Miller, 1998). While there is not a sign on the door that says “No Girls Allowed”, females place it there mentally themselves (Sadker & Sadker, 1994, p.123). Technology education courses are regarded suitable for males because of the emphasis on working with their hands, using tools and equipment, and learning about manufacturing. Therefore, we can understand why technology education courses are male dominated. Male students enroll in technology education courses, and females enroll in humanities courses, which have been predetermined and engrained in the perceptions of students by society.

Since the introduction of manual training its purpose, at least in the late 19th century, was to keep boys in school, provide vocational skills, and develop leisure-time interests (Gerbracht & Babcock, 1969). As technology and technology education have evolved males have remained to be considered leaders in these respective fields. The majority of female students who enroll in technology education courses view themselves as not conforming to the norms of society (Silverman & Pritchard, 1994). Many female students also lack confidence in their technical abilities and display anxiety concerning the perceptions and reactions of friends and family (Silverman & Pritchard, 1994). Interestingly, research has discovered that the majority of male students consistently attribute lack of success to not trying hard enough, whereas most female students associate failure with a lack of ability and intelligence (AAUW, 1991). Girls often choose not to enroll in technology education courses because of a fear of being one of the only females surrounded in a classroom of males who have more technical experience (Silverman & Pritchard, 1994). Female students also create extremely strong relationships with female peers during their school age years (Welty & Puck, 2001). Therefore, when recruiting potential female technology education students, it is essential to attempt to also recruit and interest their peers (Sanders, 1994).

According to Welty and Puck (2001), these following suggestions can allow for more female students to enroll and benefit from technology education courses.

- Young women frequently make choices similar to those of their peers. Thus, it is significant for technology education to generate interest for both female students and their friends. Peer support and participation in technology education courses will allow for young women to feel more confident within a technology education environment.

- Allow and encourage female students to work in a group environment, specifically on design-oriented activities within a laboratory setting. This strategy will provide female students with security and support from their female peers.
- To interest female students in pursuing technology education courses, it is necessary to dismiss “shop class” stereotypes. Technology education laboratories and classrooms should be clean, organized, painted appropriately, and display images of women in technological endeavors.
- Technology education courses are perceived to be reserved for male students. To increase participation of female students in the study of technology, it is essential to implement portions of technology that represent the feminine perspective of technology. Topics and activities relating to aesthetics, ergonomics, and architecture may increase female student interest and enrollment.
- It is imperative that young women comprehend the importance of technology in our daily lives. An understanding of how technology can provide female students with promising non-traditional careers must also be integrated into technology education courses.
- Curriculum should be evaluated to ensure that the mission of technology education is made assessable to all students, especially females.

Young people are strongly influenced by the environment that surrounds them. Jewet (1996) concluded that technology is still considered a male subject, and it has remained that way for women because of parental and social perceptions along with teacher behavior and expectations. We must focus on encouraging girls and young women to view technology as an essential study to undertake. The 21st century will require successful individuals to use, manage, assess, and understand technology.

Messages From Counselors

Schools contribute integrally in developing children's perceptions of the future and the position that they will accept within society. Stereotypes that are created by society deliver an influential message to students, especially females. The American Association of University Women has conducted research that supports the actuality that most young girls select occupations due to stereotypes (Greene, 1998). Most stereotypes are embedded within the minds of children when they are young and impressionable. Stereotypes such as "I am the poorest reader in my entire class, or I will always be the last one picked," can be detrimental to the successful development of a child. Unfortunately, stereotypes become increasingly difficult to dismiss as an individual grows older. Due to existing stereotypes, female students frequently enroll in traditional majors such as nursing or education (Greene, 1998). Nursing and education careers are respectable and important for the growth and stability of our society. However, female students typically dismiss the notion of pursuing non-traditional occupations, thus limiting their future career opportunities.

Successful technologically literate individuals commonly attribute their accomplishments to the support and encouragement of influential people such as parents and teachers. To ensure student success and technological literacy it is essential for parents, teachers, and students to work together as a cohesive unit toward communal goals. Guidance counselors also play a significant role in the progression and development of young people. Guidance counselors bestow young people with information regarding available school courses, options to pursue upon graduation, and possible career paths to follow (Silverman & Pritchard, 1996). Unfortunately, not all individuals who should contribute to providing students with technical knowledge participate in the best interest of the student.

Research was conducted in May 1994 to gain insight as to what should be done to improve enrollment and retention of females in technology education in secondary schools. A survey was mailed to all female members of ITEA (International Technology Education Association), all female technology education teachers in Virginia, and all female students majoring in technology education in Virginia. One reoccurring factor that most females surveyed agreed upon was that guidance counselors had the greatest negative influence on their decision to become involved in technology education (Flowers, 1995). Many respondents also reported receiving sparse amounts of technology education course information form their guidance counselors. This lack of technology education course information can be extremely difficult for female students to overcome. Female students are less likely to have experiences with technology outside of school and must be willing to fight stereotypes about appropriate subjects for girls. Where guidance counselors did not play an active role, some female students felt that they were discouraged from taking technology education courses (Silverman & Pitchard, 1994).

This research also discovered that a meager 10% of females on the survey selected “my guidance counselor said that I should take it” as one of the reasons they decided to enroll in a technology education course (Silverman & Pritchard, 1994). Both males and females mentioned that they were discouraged to take a technology education course by their guidance counselor. However, fewer males reported being discouraged and the reasons they were given by the counselors differed from those given to females. Female students are typically faced with an attitude concerning what classes or careers are appropriate for them (Silverman & Pritchard, 1994). Overall, many female students believe that counselors are a major roadblock in directing females to technology education courses (Gloeckner & Knowlton, 1996).

Guidance counselors need to provide more information to female students about what electives are available and how they might fit in with various career options. Female students need to be encouraged to consider enrolling in technology education courses, regardless if they are uncertain whether or not to attend college, or express an interest in a technological field of study (Silverman & Pritchard, 1994). At some high schools, guidance counselors appear to be preoccupied with college requirements and know little about technology education course offerings (Dugger, 1987). This information contributes to the low number of female students enrolled in technology education courses.

Silverman and Pritchard (1996) included strategies for guidance counselors to provide adequate information to students, more specifically female students.

- Establishing links between middle school and high school guidance programs, including meetings with technology education teachers to learn more about the importance of their classes.
- Guidance counselors could schedule presentations by high school teachers at both the middle school and high school levels to inform students and staff about the relevance and necessity of their programs.
- Provide more information to both students and parents pertaining to preparation essential for the pursuit of various technical careers.
- Organize programs for students who do not plan to attend college to give them an opportunity to explore various options and obtain information concerning alternative education and training programs. Theses programs should include information concerning nontraditional careers available to women and participation of women as role models in technology education.

Guidance counselors must realize that technology education is not “shop class”, a dumping ground for unruly students, or a place where female students should not participate. Counselors must also recognize that female students are economically disadvantaged by being directed and persuaded to pursue traditional careers (Flowers, 1998). It is essential for guidance counselors to work with teachers, administrators, parents, and students to provide more information about technology education and its importance in our society (Welty & Puck, 2001). It is necessary for female students to have learning experiences in technology education to assure their active participation and informed decision making in the 21st century.

Role Models, Mentors, and Peers

In the last fifty years tremendous technological advances have occurred. The development of the internet, which allows communication and information to travel globally with the click of a mouse and the Hubble telescope which provides photographs of galaxies light years away are only a few examples of recent technological innovations. Technological developments are commonly envisioned as creations of men. Myra and David Sadker (1994), discovered that most students are not aware of societal contributions of women. Students were asked to compile a list of ten famous women and ten famous men. On average, student's lists included three women and eleven men. Surprisingly, even informed citizens are not aware that women are responsible for technological inventions such as the umbrella, Kevlar, and the tunable dye laser which is used for corrective eye surgery (Vare & Ptacek, 1987). History reveals that women have had a tremendous impact and contributed much to the study and advancement of technology. Unfortunately, most students, especially females are not aware of successful women in the field of technology (Markert, 1981)

If girls and young women are not made aware of contributions and successes of women in technological fields, the probability of their involvement and pursuit of a technological career are improbable. Children frequently associate gender role decisions with female societal roles. When boys and girls reach adolescence, they commonly discontinue thinking beyond self-constructed gender roles, which are based on messages received from parents, teachers, and peers (Welty & Puck, 2001). Through research Silverman & Pritchard (1993) discovered that sexism at the middle school level began to influence girl's perceptions about appropriate career choices. If children observe business offices where men are usually managers and women are typically secretaries, hospitals where doctors are primarily male and nurses are consistently female, and in schools where the male principal gives directions to mostly female teachers, they reach a conclusion that men are bosses and women work for them (Sadker & Sadker, 1994). Unfortunately, young people make decisions and have difficulty considering supplementary options, frequently missing opportunities for personal growth, learning, and career advancement. Therefore, children must be given the opportunity to see and hear female individuals who are participants and leaders of various professions. These opportunities will provide valuable knowledge and awareness of female success in technological careers.

Even though efforts have been made to increase the number of females in traditionally male fields of study the percentages have remained relatively low. In 1993, women accounted for only 16% of students in the United States who earned a bachelors degree in engineering (Zachary, 1994). A 1996 report released by the United States Department of Labor stated that only 8.7% of electrical engineers are women. Other reports display meager percentages ranging from 4% to 25% of women who graduated with academic degrees in technology based majors (Brooks, 1994). Maney (1996) noted that companies such as Hewlett-Packard, IBM, and Silicon Graphics each reported that approximately 10% of their engineering staff were females, however none of the top five executives were females. It is not a surprise that females in traditionally male technological fields lack the support and recognition needed to advance into a leadership role.

Parents are commonly the most influential people, or role models in the lives of their children (Sadker & Sadker, 1994). Children observe their parents interactions and mimic their behaviors as they grow older. Parental figures have the ability to either encourage their children to pursue their interests, possibly in a non-traditional field or conform to the roles that society has created for both males and females. Regardless of whether media of real life situations arise, parents need to point out sexism and explain to their children the roles now available to women (Sadker & Sadker, 1994). Parents can be a tremendous positive influence for their children regarding the importance of women's career possibilities within society.

Female role models can be very difficult to find at an early age. Most girls grow up reading stories such as Cinderella, Snow White, and Sleeping Beauty who are passive and helpless characters until they are saved by a man. Although folklore stories exist where females rely on their own intuition to save themselves, parents are typically unaware of the stories. Many stories provide limited roles for women such as mother, mermaid and fairy. In contrast, men were primarily characters given the titles house builder, storekeeper, king, farmer, judge, preacher, father, adventurer, soldier, firefighter, police officer, fisherman, monk, fighter, god, and storyteller (Sadker & Sadker, 1994). As a parent it is important to make girls and young women aware that fairytales do not reflect current beliefs and societal practices. Many young women may grow up believing that they are limited to certain occupations and societal roles due to literature that they read as a child.

"Exposing children to successful women in technology can provide inspiration and role models for young women" (Dorman, 1998). Many young women view technology as a male pastime. Unfortunately, this may contribute to the reluctance of female students to enroll in technology education courses and pursue technological careers. If female students are able to view the success of women in technological fields they may believe that they also have the ability to successfully pursue traditionally male dominated professions.

If asked, many children would be able to recognize the occupational title of their father or mother such as construction worker, dentist, or artist. However, very few if any children have a reasonable understanding of their parent's occupation. An initiative called "Take Your Daughter to Work Day" was implemented nationally on April 28th, 1993. This important day gave girls and young women the opportunity to receive a more thorough explanation of their parent's employment. Most young women have very few experiences with technology and even fewer experiences with technological careers. This initiative allowed countless young women not only to observe their parent's workplace, but also see women working with men in a goal oriented environment.

To increase female interest and subsequent enrollment in technology education courses, young women must be able to meet and talk to successful women in technological fields. Silverman & Pritchard (1996) provided the following statements that may allow for girls and young women to recognize that they can be participants and leaders in technology.

- Technology education teachers could invite successful women from various technological fields to visit and speak to their classes, discussing preparation and training needed to pursue various technological careers.
- Schools could develop career days or programs that are designated to allow

students access to women in non-traditional occupations.

- High schools can provide students with the opportunity to participate in job shadowing or work experiences. Local businesses and employers could establish a program with school districts that would allow girls and young women to meet successful women and learn information concerning technological careers.
- Schools could encourage team teaching strategies amongst technology education teachers and female teachers in related disciplines such as math and science.
- Review curriculum to ensure that it displays women participating and assuming leadership positions in technological careers.

Role models, mentors, and peers all serve as influential individuals in the lives of young people. Girls and young women especially require support and guidance due to the amount of pressure they face to conform to the traditional norms of society. Female students must be made conscious of successful women in technological fields. This will produce a heightened awareness of young women, allowing them to realize that they can successfully pursue technological careers. Exposure to female role models, mentors, and peers will initiate and develop female student interest in technology education courses.

Curriculum and Instruction

An ongoing and controversial issue within American schools is the curriculum that is being delivered to young people. Educational leaders, administrators, curriculum directors, teachers, and parents all have varying perspectives concerning what should be taught in our schools. Many adults believe that an emphasis on math and science topics is essential for student success. Others argue that English and foreign languages are necessary for the development of a well-rounded individual. Regardless of various opinions, the assumption can be made that no single curriculum can be developed to accommodate the learning needs of all students.

One fact that most educated citizens can agree upon is that many schoolbooks are written from a male perspective. Betty Friedan wrote *The Feminine Mystique*, focusing on gender biases in textbooks, which initiated research in the 1970's to determine how men and women were portrayed in children's curriculum. The research randomly selected 134 elementary school texts from 16 various publishers, between the years of 1967 and 1972, which resulted in the following ratios: (Sadker & Sadker, 1994).

Boy-centered stories to girl-centered stories	5:2
Adult male characters to adult female characters	3:1
Male biographies to female biographies	6:1
Male fairy tale stories to female fairy tale stories	4:1

Male characters are obviously more frequently represented in children's schoolbooks when compared to female characters. The message that was and still is being sent to girls and young women in schools is that men and men's perspectives are the norm.

A follow-up research endeavor in 1992 was conducted to update the status of gender equity within children's textbooks. Fifteen math, language arts, and history textbooks used in Maryland, Virginia, and the District of Columbia were examined for the study. The results were very similar to those of the study conducted in the 1970's focusing on equal representation of both males and females within student textbooks. On average, the examined textbooks revealed that men and boys were either pictured or mentioned twice as frequently as women and girls (Sadker & Sadker, 1994). Yet another study focusing on gender equity pertaining to school curriculum was conducted in a New York City elementary school by New Zealand researcher Adrienne Alton Lee. Her study discovered that women and girls were only 2.4 percent of the total number of people mentioned in class by students and the teacher. Even more disturbing was a class discussion concerning careers in New York City. A reoccurring suggestion for a female career path was prostitution (Sadker & Sadker, 1994). From an early age, students are overwhelmed with history, fairytales, and stories of men which eventually lead to their devalue of women.

Research has proven that gender bias exists within many student textbooks. If gender bias exists within the curriculum of required courses that typically have an equal distribution of male and female students, then what messages are being sent from the technology education courses and curriculum, where nearly all teachers and students are male? Many technology education teachers feel that their courses and curriculum are the most gender neutral they have ever been. The transition from industrial arts where operating heavy equipment was the norm to technology education where computer-learning modules are common should make the subject more attractive to female students (Silverman & Pritchard, 1996). However, environments that are clean and filled with modern technology do not assure that instruction is taking into consideration female perspectives.

Students in technology education courses enjoy working with their hands and being able to work creatively and independently (Silverman & Pritchard, 1996). These courses commonly require students to think critically in a systematic fashion that strengthens problem-solving skills that are desperately needed in today's society. Learning activities that are commonly an integral part of technology education course curriculum includes designing, building, and testing bridges, along with building aerodynamic model cars and rockets. However, female students prefer to concentrate on the aesthetics qualities of projects instead of focusing on construction, unfortunately aesthetics are not usually a priority to male teachers. Two main reasons that can be attributed to the slow infusion of female perspectives in technology education curriculum include a lack of female teachers, and curriculum along with culture are associated strongly to males (Rothschild, 1988). The reality of technology education curriculum pertaining to the interests and needs of female students will hopefully be found in the future.

Some leaders within the profession of technology education have not reached consensus regarding instructional methods. Many technology education teachers and curriculum experts suggest that numerous instructional approaches such as modular based, interdisciplinary methodology, and problem solving need to be implemented to assure technological literacy (Bosner, 1998). Thode (1989) claims that self-paced modular instruction is a method that can reach a variety of learning styles and learning levels. Wicklein (1991) believes that technology education is a content area that corresponds with other subjects such as math, science, social studies, and English, therefore interdisciplinary instruction should be implemented. Other educators such as Deluca (1992) claim that problem-solving centered instruction is essential for the development of student higher-level cognitive abilities. Regardless of the method of delivering curriculum to technology education students, the focus must be concentrated on reaching all students to promote technological literacy (Technology for All Americans Project, 1996).

To assure that all technology education students receive adequate and unbiased instruction these guidelines could be followed.

- Teachers should review curriculum to assure that course objectives and learning experiences are directed toward both male and female students.
- Textbooks that are old or biased toward male attitudes and perspectives could be replaced with more gender-neutral materials.
- Examples and terminology that are used in technology education courses typically reflect male viewpoints. Teachers should use examples that are understood and unbiased to both male and female students.
- Female students are interested in aesthetics and detail-oriented characteristics. When implementing learning activities, allow for student creativity and require aesthetic qualities to be evident on finished products.
- Encourage students to work with partners to solve problems and achieve common goals. This will ease female tension and increase their ability to complete quality work.

Technology education teachers must attempt to increase the technological literacy of all their students. To accomplish this responsibility, curriculum and instruction must be delivered in a gender-neutral fashion. Both male and female students should be made aware of respectable contributions to the content area of technology from men and women. Technology education teachers must constantly assess their instruction and curriculum to create an environment where young men and women receive equal learning opportunities.

Classroom Climate

Most students enter a technology education course with stereotypical ideas regarding the atmosphere of the classroom or laboratory. Many young people associate technology education with shop classes of previous decades. Shop classes usually consist of males operating large pieces of machinery in a dirty, loud, and dimly lit room. This room is typically located at the end of a long corridor, far away from the majority of other classrooms. There is a high probability that girls and young women will embrace stereotypes concerning what the environment of a technology education classroom will resemble (Hill, 1993). Most females hear the word technology and make an associate to blue-collar jobs where things are fixed or made (Gloeckner & Knowlton, 1996). Women may relate this visualization to the industrial occupations of their father or grandfather. Industrial occupations are sometimes viewed as grueling manual labor performed over long hours in a dangerous and stressful environment. This stereotype is enough to deter female students from technology education before they even step into the classroom or laboratory.

A negative perception that female students have concerning technology education regards the clientele that frequently enrolls in these courses. Technology education courses can become environments where “troubled students” are placed which give the content area a tough image. Many girls and young women who observe a nonchalant mentality in technology education courses commonly choose to enroll in other electives (Gloeckner & Knowlton, 1996). Female students are concerned regarding the perceptions that their peers will have in relation to the courses that they choose to enroll in. Regardless of whether or not the technology education classroom and laboratories are clean, female students enrolled in the technology education courses are concerned that other female peers will view the classes as dirty and masculine (Gloeckner & Knowlton, 1996).

Statistics consistently illustrate that technology education classes are predominantly male. Young males and females are searching for their identity during their school-aged years. Males are typically aggressive and females being the minority group within the classroom are usually passive. Boys will do whatever is necessary to obtain the attention of the teacher. In contrast, female students will raise their hand and wait patiently to be recognized before speaking (Pavalko, 1995). Technology education laboratories commonly become environments where male students dominate the use of tools and machinery while female students are spectators (Silverman & Pritchard, 1994). Many teachers allow this behavior to continue, assuming that female students are intimidated by the equipment and are choosing to not participate. Female students are then influenced to believe that they are not capable of successfully using the equipment, their learning opportunities are not equivalent to their male counterparts, and that the teacher is not concerned. Studies have also demonstrated that women’s perspectives are not viewed equally when compared to those of a man. More specifically, women are more frequently interrupted during conversations compared to men (Henes, 1994). If these behaviors continue in our schools, female students may begin to believe that their opinions and opportunities are not significant.

Female students are commonly and unfortunately harassed with sexist and dehumanizing remarks when they enter and exit technology classrooms. Many girls and young women feel as though they are odd and not conforming to societal norms due to their participation in technology education (Gloeckner & Knowlton, 1996). In technology education classes, boys frequently verbally insult females and their behavior is dismissed as boys being boys (DuVergne-Smith, 1996). Not only are female students sometimes verbally humiliated but they are also terribly outnumbered. Girls and young women have reported that male teasing and harassment did not prevent them from enrolling in and continuing their attendance in technology education courses. Conversely, female students showed concern that the insults they received negatively influenced many of their peers (Gloeckner & Knowlton, 1996). Peer attitudes weigh heavily on the opinions and perspectives of young people, especially females who are attempting to gain acceptance to a particular peer group. This may explain the percentage of female students who enroll in technology education courses and eventually determine to pursue other course options.

In most technology education classrooms and laboratories the language, pictures, and protective gear are more suited for males instead of all students (Gloeckner & Knowlton, 1996). Technology education textbooks are filled with pictures of men successfully using tools and technological devices in numerous applications to solve problems. Men in technological professions are commonly featured at the conclusion of textbook chapters discussing their careers and accomplishments. Advertisements and posters for equipment or laboratory supplies cover the walls typically displaying men. Not only are the majority of technology education students and teachers male but items that surround the classrooms and laboratories are presented from a male perspective. Young women usually acquire the impression that they do not belong and are intruding upon uninviting male territory. Female students may obtain a sense of alienation before they are even confronted with male biased curriculum. Unfortunately, gender bias in technology education courses contributes to male power struggles and eventually leads to their own miseducation (Pavalko, 1995).

The following ideas can be implemented into technology education laboratories and classrooms to create a more acceptable and gender neutral climate for female students.

- When communicating with students and professional staff use language that is gender neutral. Refrain from using references such as man-made or calling on male students by their last name (Welty & Puck, 2001).
- Male students are usually aggressive and control student access to tools and learning equipment in technology education laboratories and classrooms. Assess the distribution of equipment to assure that all students have an opportunity to participate in learning activities and experiences.
- Teachers frequently assume that female students are not strong enough to properly operated large machinery. It is essential to provide all students an opportunity to work independently. Allow girls and young women to attempt tasks on their own after providing an operational demonstration while stressing safety (Welty & Puck, 2001).
- Maintain a classroom of mutual respect amongst all students and professional staff. Stress the importance of taking into consideration the wants and needs

of other students. Develop clear rules and consequences concerning behavior, language, and disrespect. Female students should feel assured that if they are harassed or disrespected those responsible will face consequences.

- Make it a priority to keep laboratories clean and well organized. If necessary, repaint and discard old non-used equipment and materials to create a more welcoming and respectful environment for all students.
- Display graphic representations of women using technology to solve problems. Simple posters can interest young women and allow them to feel as though they are capable of being successful in technology education courses. Providing images of women in technology will create a more welcoming environment for female students, and may contribute to the dismissal of male stereotypes.

Teachers must strive to create a climate that allows for all students to actively participate, learn, and feel accepted. Technology education courses which consist of predominantly male students, can create an especially intimidating environment. Sadler & Hoffman (1992) explained that young women commonly receive “chilly messages” due to the classroom environment, and from interactions with peers and teachers. Technology education teachers must work diligently to improve classroom climate to assure that all students are provided equal learning opportunities.

Summary

Technology has evolved continually since the beginning of human existence. Technological advancements in the 21st century make it essential for all citizens to be technologically literate. Despite our dependence on technology many individuals lack technical knowledge and abilities. Technology education courses can provide all students with knowledge and problem-solving abilities that will benefit them for the remainder of their lives. However, the majority of students enrolled in technology education courses are male.

Low female enrollment in technology education and other technical fields is not considered a new problem but one that must be addressed (Husher, 1993). Female students have been persuaded by society to pursue traditional careers and fields of study, thus limiting their opportunities. Peer relationships, the environment of technology classrooms, male-biased curriculum, guidance personnel, and general society have all contributed to the decision of female students to no enroll in technology education courses. Even though many technology educators and professional staff recognize factors that deter females from the pursuit of technological literacy, few changes have been implemented to better accommodate the educational needs of female students. Increased female participation in technology education will create a more balanced and positive learning environment for all students.

The 21st century calls for citizens to be technologically literate contributing members of society. In the future we will become more dependent on technology than ever before. Therefore, all students must have the opportunity to participate in technology education courses to assure their active involvement in our current and future technological society.

CHAPTER III

METHODOLOGY

Introduction

This chapter will outline the methods and procedures that were used in this study. The rationale of this descriptive research study is to determine the factors that prevent female students from enrolling in technology education courses at Richfield Senior High School. The researcher did not attempt to sample female students in technology education courses at Richfield Senior High School due to low female enrollment. Therefore, the information was gathered from the general population.

Research Design

A review of literature led to the identification of several factors that contribute to the reluctance of female students to enroll in technology education courses. The factors that were identified and used within the questionnaire to measure student responses were: a) sense of self and social fit factors, b) guidance counselor factors, c) role model mentor and peer factors, d) curriculum and instruction factors, e) classroom climate factors.

Source of Information

The content for this study came from professional technology education literature and a questionnaire that was developed by the researcher. Sources such as the *Journal of Technology Education*, *The Journal of Industrial Teacher Education*, and *The International Technology Education Association's National Standards For The Study of Technology* were referenced to create the foundation of the literature review.

Sample Selection

The subjects for this research project were students from Richfield Senior High School, Richfield Minnesota. Richfield Senior High School consists of approximately 1,500 students in grades 9-12. The male and female population is approximately equal at Richfield Senior High School. To obtain a representative sample of the student population, respondents were selected according to English courses. All students are required to enroll in an English course that corresponds to their grade level. Sixteen English classes, 4 each from each grade level were asked to voluntarily complete a questionnaire. The respondents from randomly selected ninth grade (n=104), tenth grade (n=99), eleventh grade (n=92), and twelfth grade (n=105) English classes provided a sample size of 400 students. Students were selected from a core curriculum course as opposed to an elective course in hopes of decreasing respondent bias toward elective technology education courses.

Instrumentation

The technology education questionnaire (Appendix A) was developed and implemented by the author. The questionnaire was the only instrument used in this study. It was designed to measure factors that prevented female students from enrolling in technology education courses. The results of this study compared responses of each student that participated in the study. The content of the survey was derived primarily from the review of literature, which consisted of professional literature and technology education journals.

Questions 1 & 2

The first two questions were written to address student interest in technology education courses at Richfield Senior High School. This was accomplished by asking students to select technology education courses that they were interested in taking and also what technology education courses they intend on taking in the future. Students were able to select from the technology education courses that are offered at Richfield Senior High School. Technology education courses that are offered include engineering drafting, technology lab, photography, metalworking, television and video production, small engines, woodworking, and architectural design. Students were also allowed to select the option of having no interest and no intentions of enrolling in technology education courses.

Questions 3 & 4

The third and fourth questions were written to address the first research question, "To what extent do role model, mentor, and peer factors contribute to the reluctance of female students to enroll in technology education courses at Richfield Senior High School?" This was accomplished by asking students to select technology education classes that their parents would become excited about. Students were also asked to select technology education classes that they would enroll in only if a friend would also sign up for the class. Students were able to select from the technology education courses that are offered at Richfield Senior High School. Students were also allowed to select an option of parents and themselves having no interest in technology education courses.

Questions 5 & 6

The fifth and sixth questions were written to address the second research question, "What guidance counselor factors contribute to the reluctance of female students to enroll in technology education courses at Richfield Senior High School?" This was accomplished by asking students to select technology education classes that guidance counselors have encouraged students to enroll in. Students were also asked what technology education courses guidance counselors have told them will be preparation for further education. Students were able to select from the technology education courses that are offered at Richfield Senior High School. Students were also allowed to select an option of having received no information concerning technology education courses from Richfield Senior High School guidance counselors.

<u>Questions 7 & 8</u>

The seventh and eighth questions were written to address the third research question, "What socialization factors contribute to the reluctance of female students to enroll in technology education courses at Richfield Senior High School?" This was accomplished by asking students to select technology education courses where they may be the only male or female student in the class. Students were also asked to select technology education classes that they thought were appropriate for boys, appropriate for girls, or appropriate for all students. Students were able to select from the technology education courses that are offered at Richfield Senior High School. Students had the option to select being the only male or female student in all of the technology education courses and also that none of the courses are appropriate for all students.

<u>Questions 9 & 10</u>

The ninth and tenth questions were written to address the fourth research question, "What classroom climate factors contribute to the reluctance of female students to enroll in technology education courses at Richfield Senior High School?" This was accomplished by asking students to select technology education courses that they felt provided a clean and safe place to learn. Students were able to select from the technology education courses that are offered at Richfield Senior High School. Students had the option to select that no technology education courses provide a clean and safe environment.

<u>Questions 11 & 12</u>

The eleventh and twelfth questions were written to address the fifth research question, "What curriculum and instruction factors contribute to the reluctance of female students to enroll in technology education courses at Richfield Senior High School? This was accomplished by asking students to select technology education courses that they felt solved real problems. Students were also asked to select technology education courses that permitted only tinkering with tools and materials. Students were able to select from the technology education courses that are offered at Richfield Senior High School. Students had the option to select that no technology education course provided an opportunity to solve real problems or use tools or materials.

<u>Questions 13 thru 17</u>

The last section of the questionnaire contains 5 demographic questions. The first item identified the respondent as male or female. The gender data that was acquired from this item was used to make comparisons between the responses of male and female students. The second item in this section identified the student by their grade level either freshmen, sophomore, junior, or senior. The third item asked if the student had taken a technology education course at the middle school level. The fourth item identified what technology education classes the students had taken at Richfield Senior High School. The final item in this section asked students to identify their plans upon graduation from Richfield Senior High School.

Data Collection

The researcher developed an instrument that measured the factors that prevented female students from enrolling in technology education courses at Richfield Senior High School during the 2002 fall semester (Appendix A). Four English classes from each grade level were randomly selected to provide a sample population of students. The researcher read an introductory paragraph about the research project to all selected English classes (Appendix D). Consent forms were distributed by the researcher to all students who were present when the introductory paragraph was read (Appendix C). Students who returned signed parental consent forms were allowed to complete a questionnaire. The researcher visited the various English classes during his preparation period to distribute and collect parental consent forms and questionnaires.

If the initial response rate was under representative of the population, a new collection of 8 randomly selected English courses would be chosen. This would provide a secondary sample of students at Richfield Senior High School.

Data Analysis

The questionnaire was used to measure female student perceptions of technology education, more specifically factors that contribute to female student reluctance to enroll in technology education courses. Factors such as curriculum and instruction, sense of self and social fit, classroom climate, role models, mentors and peers, and messages from counselors were measured. Upon receiving completed questionnaires the data was computed to determine what factors prevented female students from enrolling in technology education courses at Richfield Senior High School

Pilot Testing

A pilot of the instrument was administered to Richfield Senior High School professional staff members, students, and University of Wisconsin-Stout technology education professors. Two male and two female students from each grade level at Richfield Senior High School were selected to complete the questionnaire and provide the researcher with feedback concerning confusing questions, directions, and readability. One English teacher and one administrator from the Richfield School District along with two University of Wisconsin-Stout technology education professors were asked to review the questionnaire for appropriate content and measurement of factors. Feedback from all individuals involved in the pilot testing was taken into consideration when generating the concluding draft of the questionnaire.

CHAPTER IV

RESULTS

Introduction

The purpose of this descriptive study was to identify the factors that prevent female students from enrolling in technology education courses at Richfield Senior High School. Using an instrument, students were surveyed for factors that contributed to their reluctance to enroll in technology education courses. Factors that students were asked about include sense of self and social fit, messages from counselors, role models, mentors, and peers, curriculum and instruction, and classroom climate.

Rate of Response

Questionnaire permission slips were distributed to 400 students at Richfield Senior High School. Approximately 100 students from the selected English classes representing each grade participated in the study. Of the 400 questionnaire permission slips that were distributed on January 8th, 9th, and 10th to students in grades 9-12, 362 or approximately 90% were returned. Questionnaires were not handed out to 38 students because they did not produce a signed permission slip.

Demographic Information

Table 1 describes the demographic information of the sample group. Two items on the questionnaire were used to identify respondent's gender and grade level. Of the 362 respondents, 89 (24.6%) identified themselves as freshmen, 91 (25.1%) as sophomores, 82 (22.7%) as juniors, and 100 (27.6%) as seniors; 184 (50.8%) respondents were female and 178 (49.2%) respondents were male. Female respondents outnumbered male respondents at all grade levels with the exception of the seniors. The senior class had the greatest number of respondents (100) while the junior class had the weakest representation (82) among all grade levels.

Table 1

Sample Demographics

	Frequency	Percent
Freshman	89	24.60%
Males	41	46.10%
Females	48	53.90%
Sophomores	91	25.10%
Males	42	46.20%
Females	49	53.80%
Juniors	82	22.70%
Males	38	46.30%
Females	44	53.70%
Seniors	100	27.60%
Males	57	57%
Females	43	43%
Males	178	49.20%
Females	184	50.80%

Interest in Engineering Drafting

Students were asked to select technology education courses that they would be interested in taking. Engineering drafting was one of the eight classes that students could select. Approximately one third of male respondents (29.8%) and only a few of the female respondents (8.2%) indicated an interest in the engineering drafting class. Table 2 describes the collected data that addresses this question.

A Chi-square analysis revealed than more male respondents than female respondents were interested in engineering drafting ($p = .001$). The lowest level of endorsement for the course came from the freshman class (4.5%) and the sophomore class (26.4%) indicated the highest level of interest ($p = .01$).

Female respondents demonstrated a lower level of interest for the engineering drafting course when compared to male respondents at all grade levels ($p = .001$). Student interest for the course increased dramatically from the freshman to sophomore grade level.

Table 2

Interest in Engineering Drafting

	Checked	Not Checked	Not Interested	n
Male	53 (29.8%)	106 (59.6%)	19 (10.7%)	178
Female	15 (8.2%)	147 (79.9%)	22 (12.0%)	184
Freshman	4 (4.0%)	74 (83.1%)	11 (12.4%)	89
Male	2 (4.9%)	35 (85.4%)	4 (9.8%)	41
Female	2 (4.2%)	39 (81.3%)	7 (14.5%)	48
Sophomore	24 (26.4%)	56 (61.5%)	11 (12.1%)	91
Male	17 (40.5%)	20 (47.6%)	5 (11.9%)	42
Female	7 (14.3%)	36 (73.5%)	6 (12.5%)	49
Junior	21 (25.6%)	54 (65.9%)	7 (8.5%)	82
Male	16 (42.1%)	20 (52.6%)	2 (5.3%)	38
Female	5 (11.4%)	34 (77.3%)	5 (11.4%)	44
Senior	19 (19.0%)	69 (69.0%)	12 (12.0%)	100
Male	18 (31.6%)	31 (51.4%)	8 (14.0%)	57
Female	1 (2.3%)	38 (88.4%)	4 (9.3%)	43

Note. Gender: $X^2 (2, N = 362) = 28.007$, p = .001; Grade Level: $X^2 (6, N = 362) = 18.584$, p = .01
Gender & Grade Level: $X^2 (14, N = 362) = 57.922$, p = .001

Interest in Technology Lab

Students were asked to select technology education courses that they would be interested in taking. Technology lab was one of the eight classes that students could select. Approximately one third of male respondents (36.5%) and only a few female respondents (8.7%) indicated an interest in the technology lab class. Table 3 describes the collected data that addresses this question.

A Chi-square analysis revealed than more male respondents than female respondents indicated an interest in the technology lab course ($p = .001$). The lowest level of endorsement came from the junior class (15.9%) and the sophomore class indicated the highest level of interest (27.5%). Interest for the course according to grade level did not vary tremendously ($p = .474$).

The technology lab course received the lowest levels of interest from female students at all four-grade levels ($p = .001$). Male interest in technology lab was approximately equal when comparing freshman and sophomores to juniors and seniors. Although this class is typically taken by freshmen students, sophomores and seniors represented a large population of students who endorsed the class.

Table 3

Interest in Technology Lab

	Checked	Not Checked	Not Interested	n
Male	65 (36.5%)	94 (52.8%)	19 (10.7%)	178
Female	16 (8.7%)	146 (79.3%)	22 (12.0%)	184
Freshman	18 (20.2%)	60 (67.4%)	11 (12.4%)	89
Male	13 (31.7%)	24 (58.5%)	4 (9.8%)	41
Female	5 (10.4%)	36 (75.0%)	7 (14.6%)	48
Sophomore	25 (27.5%)	55 (60.4%)	11 (12.1%)	91
Male	22 (52.4%)	15 (35.7%)	5 (11.9%)	42
Female	3 (6.1%)	40 (81.6%)	6 (12.5%)	49
Junior	13 (15.9%)	62 (75.6%)	7 (8.5%)	82
Male	10 (26.3%)	26 (68.4%)	2 (5.3%)	38
Female	3 (6.8%)	36 (81.8%)	5 (11.4%)	44
Senior	25 (25.0%)	63 (63.0%)	12 (12.0%)	100
Male	20 (35.1%)	29 (50.9%)	8 (14.0%)	57
Female	5 (11.6%)	34 (79.1%)	4 (9.3%)	43

Note. Gender: X^2 (2, N = 362) = 41.040, p = .001; Grade Level: X^2 (6, N = 362) = 5.566, p = .474
Gender & Grade Level: X^2 (14, N = 362) = 54.364, p = .001

Interest in Photography

Students were asked to select technology education courses that they would be interested in taking. Photography was one of the eight classes that students could select. Approximately one-third (33.7%) of males and many (72.3%) females indicated that they were interested in the photography class. Table 4 describes the collected data that addresses this question.

A Chi-square analysis revealed that more female respondents than male respondents were interested in photography ($p = .001$). Interest in the photography course varied amongst all four grades ($p = .968$).

The photography course received the lowest level of interest (29.3%) from freshman males. Male students showed a consistently weaker endorsement for photography when compared to female students ($p = .001$). Although this class is typically taken by underclassmen, junior and senior students indicated an equally strong interest in the course.

Table 4

Interest in Photography

	Checked	Not Checked	Not Interested	n
Male	60 (33.7%)	99 (55.6%)	19 (10.7%)	178
Female	133 (72.3%)	29 (15.8%)	22 (12.0%)	184
Freshman	46 (51.7%)	32 (36.0%)	11 (12.4%)	89
Male	12 (29.3%)	25 (61.0%)	4 (9.8%)	41
Female	34 (70.8%)	7 (14.6%)	7 (14.6%)	48
Sophomore	50 (54.9%)	30 (33.0%)	11 (12.1%)	91
Male	15 (35.7%)	22 (52.4%)	5 (11.9%)	42
Female	35 (71.4%)	8 (16.3%)	6 (12.2%)	49
Junior	43 (52.4%)	32 (39.0%)	7 (8.5%)	82
Male	13 (34.3%)	23 (60.5%)	2 (5.3%)	38
Female	30 (68.2%)	9 (20.5%)	5 (11.4%)	44
Senior	54 (54.0%)	34 (34.0%)	12 (12.0%)	100
Male	20 (35.1%)	29 (50.9%)	8 (14.0%)	57
Female	34 (79.1%)	5 (11.6%)	4 (9.3%)	43

Note. Gender: $X^2(2, N = 362) = 66.031$, $p = .001$; Grade Level: $X^2(6, N = 362) = 1.364$, $p = .968$
Gender & Grade Level: $X^2(14, N = 362) = 70.571$, $p = .001$

Interest in Metalworking

Students were asked to select technology education courses that they would be interested in taking. Metalworking was one of the eight classes that students could select. Nearly half of the male respondents (47.8%) indicated that they were interested in the metalworking class. An overwhelming number of female respondents (93.5%) demonstrated a lack of interest toward metalworking. Table 5 describes the collected data that addresses this question.

A Chi-square analysis revealed that more male respondents than female respondents were interested in the course ($p = .001$). There was not a significant difference concerning interest for the metalworking course between the four grade levels ($p =.990$). Each grade had approximately 25% of its members endorse the metalworking class.

The metalworking course received the lowest levels of interest from female respondents at every grade level ($p = .001$). Male students indicated over 50% interest at the freshman level compared to approximately 40% at the senior level. Male interest gradually decreased as the grade level increased.

Table 5

Interest in Metalworking

	Checked	Not Checked	Not Interested	n
Male	85 (47.8%)	74 (41.6%)	19 (10.7%)	178
Female	12 (6.5%)	150 (81.5%)	22 (12.0%)	184
Freshman	23 (25.8%)	55 (61.8%)	11 (12.4%)	89
Male	22 (53.7%)	15 (36.6%)	4 (9.8%)	41
Female	1 (2.1%)	40 (83.3%)	7 (14.6%)	48
Sophomore	24 (26.4%)	56 (61.5%)	11 (12.1%)	91
Male	20 (47.6%)	17 (40.5%)	5 (11.9%)	42
Female	4 (8.2%)	39 (79.6%)	6 (12.2%)	49
Junior	23 (28.0%)	52 (63.4%)	7 (8.5%)	82
Male	18 (47.4%)	18 (47.4%)	2 (5.3%)	38
Female	5 (11.4%)	34 (77.3%)	5 (11.4%)	44
Senior	27 (27.0%)	61 (61.0%)	12 (12.0%)	100
Male	25 (43.9%)	24 (42.1%)	8 (14.0%)	57
Female	2 (4.7%)	37 (86.0%)	4 (9.3%)	43

Note. Gender: $X^2(2, N = 362) = 80.866$, $p = .001$; Grade Level: $X^2(6, N = 362) = .865$, $p = .990$
Gender & Grade Level: $X^2(14, N = 362) = 85.490$, $p = .001$

Interest in Television and Video Production

Students were asked to select technology education courses that they would be interested in taking. Television and video production was one of the eight classes that students could select. Over half of the male respondents (55.1%) and nearly half (44.6%) of the female respondents indicated an interest in the class. Table 6 describes the collected data that addresses this question.

A Chi-square analysis revealed that approximately half of both male and female students were interested in the television and video production course ($p = .128$). A minority of freshman and sophomore respondents indicated interest, while over half of junior and senior respondents indicated an interest for the course ($p = .056$).

Female students consistently demonstrated less interest in the course when compared to male students until senior year ($p = .109$). Male and female respondents indicated similar levels of interest in the television and video production course throughout all grade levels.

Table 6

Interest in Television and Video Production

	Checked	Not Checked	Not Interested	n
Male	98 (55.1%)	61 (34.4%)	19 (10.7%)	178
Female	82 (44.6%)	80 (43.5%)	22 (12.0%)	184
Freshman	39 (43.8%)	39 (43.8%)	11 (12.4%)	89
Male	21 (51.2%)	16 (39.0%)	4 (9.8%)	41
Female	18 (37.5%)	23 (47.9%)	7 (14.6%)	48
Sophomore	35 (38.5%)	45 (49.5%)	11 (12.1%)	91
Male	20 (47.6%)	17 (40.5%)	5 (11.9%)	42
Female	15 (30.6%)	28 (57.1%)	6 (12.2%)	49
Junior	48 (58.5%)	27 (32.9%)	7 (8.5%)	82
Male	26 (68.4%)	10 (26.3%)	2 (5.3%)	38
Female	22 (50.0%)	17 (38.6%)	5 (11.4%)	44
Senior	58 (58.0%)	30 (30.0%)	12 (12.0%)	100
Male	31 (54.4%)	18 (31.6%)	8 (14.0%)	57
Female	27 (62.8%)	12 (27.9%)	4 (9.3%)	43

Note. Gender: $X^2(2, N = 362) = 4.104$, $p = .128$; Grade Level: $X^2(6, N = 362) = 12.276$, $p = .056$
Gender & Grade Level: $X^2(14, N = 362) = 20.721$, $p = .109$

Interest in Small Engines

Students were asked to select technology education courses that they would be interested in taking. Small Engines was one of the eight classes that students could select. Nearly half of male respondents (47.2%) indicated that they were interested in the small engines class compared to only (6.5%) of females. Table 7 describes the collected data that addresses this question.

A Chi-square analysis revealed that more male respondents than female respondents indicated an interest toward the small engines class ($p = .001$). The lowest level of interest (19.8%) came from the sophomore class, while the highest endorsement (35.0%) was produced by the seniors ($p = .294$).

Female respondents indicated less interest in the small engines course when compared to male respondents at all grade levels ($p = .001$). Junior and senior male respondents indicated a greater level of interest in the small engines course when compared to the freshman and sophomore male respondents.

Table 7

Interest in Small Engines

	Checked	Not Checked	Not Interested	n
Male	82 (42.2%)	75 (42.1%)	19 (10.7%)	178
Female	12 (6.5%)	150 (81.5%)	22 (12.0%)	184
Freshman	21 (23.6%)	57 (64.0%)	11 (12.4%)	89
Male	16 (39.0%)	21 (51.2%)	4 (9.8%)	41
Female	5 (10.4%)	36 (75.0%)	7 (14.6%)	48
Sophomore	18 (19.8%)	62 (68.1%)	11 (12.1%)	91
Male	16 (38.1%)	21 (50.0%)	5 (11.9%)	42
Female	2 (4.1%)	41 (83.7%)	6 (12.2%)	49
Junior	22 (26.8%)	53 (64.6%)	7 (8.5%)	82
Male	20 (52.6%)	16 (42.1%)	2 (5.3%)	38
Female	2 (4.5%)	37 (84.1%)	5 (11.4%)	44
Senior	35 (35.0%)	53 (53.0%)	12 (12.0%)	100
Male	32 (56.1%)	17 (29.8%)	8 (14.0%)	57
Female	3 (7.0%)	36 (83.7%)	4 (9.3%)	43

Note. Gender: X^2 (2, N = 362) = 79.142, p = .001; Grade Level: X^2 (6, N = 362) = 7.298, p = .294
Gender & Grade Level: X^2 (14, N = 362) = 89.094, p = .001

Interest in Woodworking

Students were asked to select technology education courses that they would be interested in taking. Woodworking was one of the eight classes that students could select. Nearly half of male respondents (45.5%) and few female respondents (13.6%) indicated that they were interested in the woodworking class. Table 8 describes the collected data that addresses this question.

A Chi-square analysis revealed that more male respondents than female respondents indicated an interest for the woodworking class ($p = .001$). The lowest level of interest (24.7%) came from the freshman class, while the highest endorsement (39.0%) was produced by the juniors ($p = .476$).

Female respondents consistently demonstrated less interest in the woodworking course when compared to males at all grade levels ($p = .001$). Interest in the course for both male and female students peaked at the junior level. Female endorsement for the woodworking course increased each year until grade 12 when it declined.

Table 8

Interest in Woodworking

	Checked	Not Checked	Not Interested	n
Male	81 (45.5%)	78 (43.8%)	19 (10.7%)	178
Female	25 (13.6%)	137 (74.5%)	22 (12.0%)	184
Freshman	22 (24.7%)	56 (62.9%)	11 (12.4%)	89
Male	19 (46.3%)	18 (43.9%)	4 (9.8%)	41
Female	3 (6.3%)	38 (79.2%)	7 (14.6%)	48
Sophomore	23 (25.3%)	57 (62.6%)	11 (12.1%)	91
Male	19 (45.2%)	28 (42.9%)	5 (11.9%)	42
Female	4 (8.2%)	39 (79.6%)	6 (12.2%)	49
Junior	32 (39.0%)	43 (52.4%)	7 (8.5%)	82
Male	21 (55.3%)	15 (39.5%)	2 (5.3%)	38
Female	11 (25.0%)	28 (63.6%)	5 (11.4%)	44
Senior	29 (29.0%)	59 (59.0%)	12 (12.0%)	100
Male	22 (38.6%)	27 (47.4%)	8 (14.0%)	57
Female	7 (16.3%)	32 (74.4%)	4 (9.3%)	43

Note. Gender: X^2 (2, N = 362) = 45.908, p = .001; Grade Level: X^2 (6, N = 362) = 5.545, p = .476
Gender & Grade Level: X^2 (14, N = 362) = 55.249, p = .001

Interest in Architectural Design

Students were asked to select technology education courses that they would be interested in taking. Architectural design was one of the eight classes that students could select. A minority of males (39.9%) and females (37.0) indicated that they were interested in the architectural design class. Table 9 describes the collected data that addresses this question.

A Chi-square analysis revealed that approximately the same number of male and female students indicated an interest in the architectural design class ($p = .826$). The lowest level of interest came from the freshman class (27.0%), while the highest endorsement (46.2%) was produced by the sophomores ($p = .157$).

Female respondents indicated more interest in the course when compared to male respondents at the junior and senior grades ($p = .348$). The highest level of male interest in the course was at the junior level (50.0%). The strongest indication of female interest occurred at the sophomore level (46.9%). Freshman students indicated the smallest percentage of interest toward the course.

Table 9

Interest in Architectural Design

	Checked	Not Checked	Not Interested	n
Male	71 (39.9%)	88 (49.4%)	19 (10.7%)	178
Female	68 (37.0%)	94 (51.5%)	22 (12.0%)	184
Freshman	24 (27.0%)	54 (60.7%)	11 (12.4%)	89
Male	10 (24.4%)	27 (65.9%)	4 (9.8%)	41
Female	14 (29.2%)	27 (56.3%)	7 (14.6%)	48
Sophomore	42 (46.2%)	38 (41.8%)	11 (12.1%)	91
Male	19 (45.2%)	18 (42.9%)	5 (11.9%)	42
Female	23 (46.9%)	20 (40.8%)	6 (12.2%)	49
Junior	31 (37.8%)	44 (53.7%)	7 (8.5%)	82
Male	19 (50.0%)	17 (44.7%)	2 (5.3%)	38
Female	12 (27.3%)	27 (61.4%)	5 (11.4%)	44
Senior	42 (42.0%)	46 (46.0%)	12 (12.0%)	100
Male	23 (40.4%)	26 (45.6%)	8 (14.0%)	57
Female	19 (44.2%)	20 (46.5%)	4 (9.3%)	43

Note. Gender: X^2 (2, N = 362) = .383, p = .826; Grade Level: X^2 (6, N = 362) = 9.312, p = .157
Gender & Grade Level: X^2 (14, N = 362) = 15.458, p = .348

Plan on Taking Engineering Drafting

Students were asked to select technology education courses that they plan on taking while at Richfield Senior High School. Engineering drafting was one of the eight classes that students could select. An overwhelming number of male respondents (82.0%) and nearly all female respondents (97.3%) demonstrated that they did not plan on taking engineering drafting. Table 10 describes the collected data that addresses this question.

A Chi-square analysis revealed that more male respondents than female respondents planned on taking the class ($p = .001$). The lowest level of interest (3.4%) came from the freshman class, while the highest endorsement (15.4%) was produced by the sophomores ($p = .001$). All grades demonstrated similar levels of not anticipating on taking the engineering drafting class.

Female respondents indicated with greater frequency that they were not planning on taking the engineering drafting course when compared with male respondents at all grade levels with the exception of freshman ($p = .001$). The largest percentage of males planning on taking the course occurred at the sophomore (26.2%) and junior (26.3%) levels. Female respondents showed minimal intentions of taking the engineering drafting course at the freshman and sophomore levels and no intentions of taking the class at the junior and senior levels. Junior and senior grade level responses were skewed due to no female students planning on taking the class.

Table 10

Plan on Taking Engineering Drafting

	Checked	Not Checked	Not Interested	n
Male	32 (18.0%)	98 (55.1%)	48 (27.0%)	178
Female	5 (2.7%)	104 (56.5%)	75 (40.8%)	184
Freshman	3 (3.4%)	68 (76.4%)	18 (20.2%)	89
Male	1 (2.4%)	31 (75.6%)	9 (22.0%)	41
Female	2 (4.2%)	37 (77.1%)	9 (18.8%)	48
Sophomore	14 (15.4%)	54 (59.3%)	23 (25.3%)	91
Male	11 (26.2%)	24 (57.1%)	7 (16.7%)	42
Female	3 (6.1%)	30 (61.2%)	16 (32.7%)	49
Junior	10 (12.2%)	43 (52.4%)	29 (35.4%)	82
Male	10 (26.3%)	22 (57.9%)	6 (15.8%)	38
Female	0 (0.0%)	21 (47.7%)	23 (52.3%)	44
Senior	10 (10.0%)	37 (37.0%)	53 (53.0%)	100
Male	10 (17.5%)	21 (36.8%)	26 (45.6%)	57
Female	0 (0.0%)	16 (37.2%)	27 (62.8%)	43

Note. Gender: $X^2 (2, N = 362) = 25.715$, $p = .001$; Grade Level: $X^2 (6, N = 362) = 37.932$, $p = .001$
Gender & Grade Level: $X^2 (14, N = 362) = 80.441$, $p = .001$

Plan on Taking Technology Lab

Students were asked to select technology education courses that they plan on taking while at Richfield Senior High School. Technology lab was one of the eight classes that students could select. An overwhelming number of male respondents (80.3%) and nearly all female respondents (96.7%) demonstrated that they did not plan on taking technology lab. Table 11 describes the collected data that addresses this question.

A Chi-square analysis revealed that more male than female students planned on taking the class ($p = .001$). The lowest level of interest (4.9%) came from the junior class, while the highest endorsement (22.0%) was produced by the sophomores ($p = .001$).

Female respondents indicated with greater frequency that they were not planning on taking the technology lab course when compared with male respondents at all grade levels ($p = .001$). The largest percentage of males planning on taking the course occurred at the sophomore grade level (40.5%). Female respondents showed minimal intentions of taking the technology lab course at the freshman and sophomore levels and no intentions of taking the class at the junior and senior levels. Junior and senior grade level responses were skewed due to no female students planning on taking the class.

Table 11

Plan on Taking Technology Lab

	Checked	Not Checked	Not Interested	n
Male	35 (19.7%)	95 (53.4%)	48 (27.0%)	178
Female	6 (3.3%)	103 (56.0%)	75 (40.8%)	184
Freshman	9 (10.1%)	62 (69.7%)	18 (20.2%)	89
Male	6 (14.6%)	26 (63.4%)	9 (22.0%)	41
Female	3 (6.3%)	36 (75.0%)	9 (18.8%)	48
Sophomore	20 (22.0%)	48 (52.7%)	23 (25.3%)	91
Male	17 (40.5%)	18 (42.9%)	7 (16.7%)	42
Female	3 (6.1%)	30 (61.2%)	16 (32.7%)	49
Junior	4 (4.9%)	49 (59.8%)	29 (35.4%)	82
Male	4 (10.5%)	28 (73.7%)	6 (15.8%)	38
Female	0 (0.0%)	21 (47.7%)	23 (52.3%)	44
Senior	8 (8.0%)	39 (39.0%)	53 (53.0%)	100
Male	8 (14.0%)	23 (40.4%)	26 (45.6%)	57
Female	0 (0.0%)	16 (37.2%)	27 (62.8%)	43

Note. Gender: $X^2(2, N = 362) = 26.670$, $p = .001$; Grade Level: $X^2(6, N = 362) = 39.494$, $p = .001$
Gender & Grade Level: $X^2(14, N = 362) = 87.067$, $p = .001$

Plan on Taking Photography

Students were asked to select technology education courses that they plan on taking while at Richfield Senior High School. Photography was one of the eight classes that students could select. Approximately half of female respondents (46.2%) and some male respondents (20.2%) indicated that they planed on taking photography. Table 12 describes the collected data that addresses this question.

A Chi-square analysis revealed that more male respondents than female respondents did not plan on taking photography ($p = .001$). The lowest level of interest (20.0%) came from the senior class, while the highest endorsement (48.4%) was produced by the sophomores ($p = .001$).

Male respondents indicated with greater frequency that they were not planning on taking the photography course when compared with female respondents at all grade levels ($p = .001$). The largest percentage of males planning on taking the course occurred at the sophomore grade level (35.7%). Female respondents showed substantial intentions of taking the photography course at the freshman (64.6%) and sophomore (59.2%) levels. The frequency of female students who planned on taking the class declined consistently from freshman to senior year.

Table 12

Plan on Taking Photography

	Checked	Not Checked	Not Interested	n
Male	36 (20.2%)	94 (52.8%)	48 (27.0%)	178
Female	85 (46.2%)	24 (13.0%)	75 (40.8%)	184
Freshman	39 (43.8%)	32 (36.0%)	18 (20.2%)	89
Male	8 (19.5%)	24 (58.5%)	9 (22.0%)	41
Female	31 (64.6%)	8 (16.7%)	9 (18.8%)	48
Sophomore	44 (48.4%)	24 (26.4%)	23 (25.3%)	91
Male	15 (35.7%)	20 (47.6%)	7 (16.7%)	42
Female	29 (59.2%)	4 (8.2%)	16 (32.7%)	49
Junior	18 (22.0%)	35 (42.7%)	29 (35.4%)	82
Male	4 (10.5%)	28 (73.7%)	6 (15.8%)	38
Female	14 (31.8%)	7 (15.9%)	23 (52.3%)	44
Senior	20 (20.0%)	27 (27.0%)	53 (53.0%)	100
Male	9 (15.8%)	22 (38.6%)	26 (45.6%)	57
Female	11 (25.6%)	5 (11.6%)	27 (62.8%)	43

Note. Gender: $X^2(2, N = 362) = 67.214$, $p = .001$; Grade Level: $X^2(6, N = 362) = 40.153$, $p = .001$
Gender & Grade Level: $X^2(14, N = 362) = 121.712$, $p = .001$

Plan on Taking Metalworking

Students were asked to select technology education courses that they plan on taking while at Richfield Senior High School. Metalworking was one of the eight classes that students could select. Approximately one third of male respondents (28.1%) and very few female respondents (2.2%) indicated that they planed on taking metalworking. Table 13 describes the collected data that addresses this question.

A Chi-square analysis revealed that more female respondents than male respondents did not plan on taking metalworking ($p = .001$). The lowest level of interest (9.0%) came from the senior class, while the highest endorsement (19.8%) was produced by the sophomores ($p = .001$). All grades demonstrated that most students were not planning on taking the metalworking class.

Male respondents indicated with greater frequency that they were planning on taking the metalworking course when compared with female respondents at all grade levels ($p=.001$). The largest percentage of males planning on taking the course occurred at the sophomore grade level (38.1%). Female respondents indicated a near unanimous lack of planning on taking the metalworking course during their high school career. The number of male respondents planning on taking metalworking remained similar until a decline during senior year.

Table 13

Plan on Taking Metalworking

	Checked	Not Checked	Not Interested	n
Male	50 (28.1%)	80 (44.9%)	48 (27.0%)	178
Female	4 (2.2%)	105 (57.1%)	75 (40.8%)	184
Freshman	14 (15.7%)	57 (64.0%)	18 (20.2%)	89
Male	14 (34.1%)	18 (43.9%)	9 (22.0%)	41
Female	0 (0.0%)	39 (81.3%)	9 (18.8%)	48
Sophomore	18 (19.8%)	50 (54.9%)	23 (25.3%)	91
Male	16 (38.1%)	19 (45.2%)	7 (16.7%)	42
Female	2 (4.1%)	31 (63.3%)	16 (32.7%)	49
Junior	13 (15.9%)	40 (48.8%)	29 (35.4%)	82
Male	12 (31.6%)	20 (52.6%)	6 (15.8%)	38
Female	1 (2.3%)	20 (45.5%)	23 (52.3%)	44
Senior	9 (9.0%)	38 (38.0%)	53 (53.0%)	100
Male	8 (14.0%)	23 (40.4%)	26 (45.6%)	57
Female	1 (2.3%)	15 (34.9%)	27 (62.8%)	43

Note. Gender: $X^2 (2, N = 362) = 48.404$, $p = .001$; Grade Level: $X^2 (6, N = 362) = 28.182$, $p = .001$
Gender & Grade Level: $X^2 (14, N = 362) = 96.704$, $p = .001$

Plan on Taking Television and Video Production

Students were asked to select technology education courses that they plan on taking while at Richfield Senior High School. Television and video production was one of the eight classes that students could select. Approximately one quarter of male respondents (27.0%) and some female respondents (19.0%) indicated that they planed on taking television and video production. Table 14 describes the collected data that addresses this question.

A Chi-square analysis revealed that more female respondents than male respondents did not plan on taking the class ($p = .05$). The lowest level of interest (15.0%) came from the senior class, while the highest endorsement (28.0%) was produced by the juniors ($p = .001$). All grades demonstrated that many students were not planning on taking the television and video production course.

Freshman, sophomore, and junior respondents all indicated with greater frequency that they were planning on taking the course when compared with senior respondents ($p = .001$). The largest percentage of male respondents planning on taking the course occurred at the junior grade level (36.8%). Female respondents demonstrated a greater lack of planning on taking the course when compared to male respondents until senior year. The number of male respondents planning on taking television and video production increased until a decline during senior year.

Table 14

Plan on Taking Television and Video Production

	Checked	Not Checked	Not Interested	n
Male	48 (27.0%)	82 (46.1%)	48 (27.0%)	178
Female	35 (19.0%)	74 (40.2%)	75 (40.8%)	184
Freshman	22 (24.7%)	49 (55.1%)	18 (20.2%)	89
Male	11 (26.8%)	21 (51.2%)	9 (22.0%)	41
Female	11 (22.9%)	28 (58.3%)	9 (18.8%)	48
Sophomore	23 (25.3%)	45 (49.5%)	23 (25.3%)	91
Male	15 (35.7%)	20 (47.6%)	7 (16.7%)	42
Female	8 (16.3%)	25 (51.0%)	16 (32.7%)	49
Junior	23 (28.0%)	30 (36.6%)	29 (35.4%)	82
Male	14 (36.8%)	18 (47.4%)	6 (15.8%)	38
Female	9 (20.5%)	12 (27.3%)	23 (52.3%)	44
Senior	15 (15.0%)	32 (32.0%)	53 (53.0%)	100
Male	8 (14.0%)	23 (40.4%)	26 (45.6%)	57
Female	7 (16.3%)	9 (20.9%)	27 (62.8%)	43

Note. Gender: X^2 (2, N = 362) = 8.276, p = .05; Grade Level: X^2 (6, N = 362) = 29.172, p = .001
Gender & Grade Level: X^2 (14, N = 362) = 51.729, p = .001

Plan on Taking Small Engines

Students were asked to select technology education courses that they plan on taking while at Richfield Senior High School. Small Engines was one of the eight classes that students could select. Most male respondents (78.7%) and nearly all female respondents (98.4%) indicated that they did not plan on taking the small engines class. Table 15 describes the collected data that addresses this question.

A Chi-square analysis revealed that more male respondents (21.3%) than female students (1.6%) planned on taking the class ($p = .001$). The lowest level of interest (7.0%) came from the senior class, while the highest endorsement (13.5%) was produced by the freshmen ($p = .001$). All grades demonstrated that most students were not planning on taking the small engines course.

The largest percentage of males planning on taking the course occurred at the junior grade level (28.9%). Female respondents demonstrated an overwhelming lack of planning on taking the course at all grade levels ($p = .001$). Males indicated that they planned on taking the course at a consistent level until senior year.

Table 15

Plan on Taking Small Engines

	Checked	Not Checked	Not Interested	n
Male	38 (21.3%)	92 (51.7%)	48 (27.0%)	178
Female	3 (4.6%)	106 (57.6%)	75 (40.8%)	184
Freshman	12 (13.5%)	59 (66.3%)	18 (20.2%)	89
Male	10 (24.4%)	22 (53.7%)	9 (22.0%)	41
Female	2 (4.2%)	37 (77.1%)	9 (18.8%)	48
Sophomore	11 (12.1%)	57 (62.6%)	23 (25.3%)	91
Male	10 (23.8%)	25 (59.5%)	7 (16.7%)	42
Female	1 (2.0%)	32 (65.3%)	16 (32.7%)	49
Junior	11 (13.4%)	42 (51.2%)	29 (35.4%)	82
Male	11 (28.9%)	21 (55.3%)	6 (15.8%)	38
Female	0 (0.0%)	21 (47.7%)	23 (52.3%)	44
Senior	7 (7.0%)	40 (40.0%)	53 (53.0%)	100
Male	7 (13.2%)	24 (42.1%)	26 (45.6%)	57
Female	0 (0.0%)	16 (37.2%)	27 (62.8%)	43

Note. Gender: X^2 (2, N = 362) = 36.705, p = .001; Grade Level: X^2 (6, N = 362) = 27.426, p = .001
Gender & Grade Level: X^2 (14, N = 362) = 77.782, p = .001

Plan on Taking Woodworking

Students were asked to select technology education courses that they plan on taking while at Richfield Senior High School. Woodworking was one of the eight classes that students could select. Less than one third of male respondents (28.1%) and only a few female respondents (3.8%) indicated that they planned on taking woodworking. Table 16 describes the collected data that addresses this question.

A Chi-square analysis revealed that more male respondents than female respondents planned on taking woodworking ($p = .001$). The lowest level of interest (9.0%) came from the senior class, while the highest endorsement (23.2%) was produced by the juniors ($p = .001$).

The largest percentage of males planning on taking the course occurred at the junior grade level (44.7%). Female respondents demonstrated a lack of planning on taking the course at all grade levels ($p = .001$). Male respondents who planned on taking woodworking increased consistently until senior year.

Table 16

Plan on Taking Woodworking

	Checked	Not Checked	Not Interested	n
Male	50 (28.1%)	80 (44.9%)	48 (27.0%)	178
Female	7 (3.8%)	102 (55.4%)	75 (40.8%)	184
Freshman	13 (14.6%)	58 (65.2%)	18 (20.2%)	89
Male	11 (26.8%)	21 (51.2%)	9 (22.0%)	41
Female	2 (4.2%)	37 (77.1%)	9 (18.8%)	48
Sophomore	16 (17.6%)	52 (57.1%)	23 (25.3%)	91
Male	15 (35.7%)	20 (47.6%)	7 (16.7%)	42
Female	1 (2.0%)	32 (65.3%)	16 (32.7%)	49
Junior	19 (23.2%)	34 (41.5%)	29 (35.4%)	82
Male	17 (44.7%)	15 (39.5%)	6 (15.8%)	38
Female	2 (4.5%)	19 (43.2%)	23 (52.3%)	44
Senior	9 (9.0%)	38 (38.0%)	53 (53.0%)	100
Male	7 (12.2%)	24 (42.1%)	26 (45.6%)	57
Female	2 (4.7%)	14 (32.6%)	27 (62.8%)	43

Note. Gender: $X^2 (2, N = 362) = 40.937$, $p = .001$; Grade Level: $X^2 (6, N = 362) = 32.752$, $p = .001$
Gender & Grade Level: $X^2 (14, N = 362) = 94.808$, $p = .001$

Plan on Taking Architectural Design

Students were asked to select technology education courses that they plan on taking while at Richfield Senior High School. Architectural design was one of the eight classes that students could select. Most of the male respondents (77.0%) and female respondents (82.1%) indicated that they did not plan on taking architectural design. Table 17 describes the collected data that addresses this question.

A Chi-square analysis revealed that more male respondents (23.0%) than female respondents (17.9%) planned on taking architectural design ($p = .05$). The lowest level of interest (13.4%) came from the junior class, while the highest endorsement (33.0%) was produced by the sophomores ($p = .001$).

The largest percentage of students planning on taking the course occurred at the sophomore grade level (35.7%). Sophomore male and female respondents indicated similar plans of taking the course ($p = .001$). Male respondents who planned on taking architectural design increased between the freshmen and sophomore grade levels. The percentage of males who were planning on taking the class tapered off (21.1%) during junior and senior year. Furthermore, the percentage of female respondents who planned on taking the class increased between freshmen and sophomore year. An overwhelming percentage of junior and senior females demonstrated that they were not planning on taking architectural design.

Table 17

Plan on Taking Architectural Design

	Checked	Not Checked	Not Interested	n
Male	41 (23.0%)	89 (50.0%)	48 (27.0%)	178
Female	33 (17.9%)	76 (41.3%)	75 (40.8%)	184
Freshman	17 (19.1%)	54 (60.7%)	18 (20.2%)	89
Male	6 (14.6%)	26 (63.4%)	9 (22.0%)	41
Female	11 (22.9%)	28 (58.3%)	9 (18.8%)	48
Sophomore	30 (33.0%)	38 (41.8%)	23 (25.3%)	91
Male	15 (35.7%)	20 (47.6%)	7 (16.7%)	42
Female	15 (30.6%)	18 (36.7%)	16 (32.7%)	49
Junior	11 (13.4%)	42 (51.2%)	29 (35.4%)	82
Male	8 (21.1%)	24 (63.2%)	6 (15.8%)	38
Female	3 (6.8%)	18 (40.9%)	23 (52.3%)	44
Senior	16 (16.0%)	31 (31.0%)	53 (53.0%)	100
Male	12 (21.1%)	19 (33.3%)	26 (45.6%)	57
Female	4 (9.3%)	12 (27.9%)	27 (62.8%)	43

Note. Gender: X^2 (2, N = 362) = 7.719, p = .05; Grade Level: X^2 (6, N = 362) = 37.663, p = .001
Gender & Grade Level: X^2 (14, N = 362) = 57.339, p = .001

Parental Support for Engineering Drafting

Students were asked to select technology education courses that they thought their parents would get excited about. Engineering drafting was one of the eight classes that students could select. Many male respondents (76.3%) and an overwhelming amount of female respondents (88.0%) indicated that they did think that their parents would get excited about the engineering drafting class. Table 18 describes the collected data that addresses this question.

A Chi-square analysis revealed that more male respondents (23.7%) than female respondents (12.0%) believed that their parents would get excited about the class ($p = .01$). The lowest level of speculated parental interest (9.0%) came from the freshman class, while the highest endorsement (22.2%) was produced by the sophomores ($p = .001$). All grades demonstrated that most students did not believe that their parents would be excited about the engineering drafting course.

The largest percentage of males who thought parents would get excited occurred at the junior grade level (34.2%). An overwhelming percentage of female respondents at all grade levels with the exception of the sophomore class, demonstrated that their parents would not be excited ($p = .001$). Male respondents indicated higher frequencies of parental excitement at all grade levels when compared to female respondents.

Table 18

Parental Support for Engineering Drafting

	Checked	Not Checked	Not Interested	n
Male	42 (23.7%)	84 (47.5%)	51 (28.8%)	177
Female	22 (12.0%)	109 (59.2%)	53 (28.8%)	184
Freshman	8 (9.0%)	48 (53.9%)	33 (37.1%)	89
Male	5 (12.2%)	21 (51.2%)	15 (36.6%)	41
Female	3 (6.3%)	27 (56.3%)	18 (37.55)	48
Sophomore	20 (22.2%)	41 (45.6%)	29 (32.2%)	90
Male	10 (24.4%)	17 (41.5%)	14 (34.1%)	42
Female	10 (20.4%)	24 (49.0%)	15 (30.6%)	49
Junior	16 (19.5%)	41 (50.0%)	25 (30.5%)	82
Male	13 (34.2%)	16 (42.1%)	9 (23.7%)	38
Female	3 (6.8%)	25 (56.8%)	16 (36.4%)	44
Senior	20 (20.0%)	63 (63.0%)	17 (17.0%)	100
Male	14 (24.6%)	30 (52.6%)	13 (22.8%)	57
Female	6 (14.0%)	33 (76.7%)	4 (9.3%)	43

Note. Gender: X^2 (2, N = 361) = 9.395, p = .01; Grade Level: X^2 (6, N = 361) = 15.637, p = .05
Gender & Grade Level: X^2 (14, N = 361) = 33.087, p = .01

Parental Support for Technology Lab

Students were asked to select technology education courses that they thought their parents would get excited about. Technology lab was one of the eight classes that students could select. Most male respondents (81.4%) and female respondents (82.1%) indicated that they did think that their parents would get excited about the technology lab class. Table 19 describes the collected data that addresses this question.

A Chi-square analysis revealed that some male respondents (18.6%) and female respondents (17.9%) believed that their parents would get excited about the class ($p = .983$). The lowest level of speculated parental interest (15.7%) came from the freshman class, while the highest endorsement (21.0%) was produced by the seniors ($p = .102$). All grades demonstrated that most students did not believe that their parents would be excited about the engineering drafting course.

The largest percentage of males who thought parents would get excited surprisingly occurred at the senior grade level (24.6%). Sophomore female respondents who thought that their parents would get excited (20.4%) outnumbered sophomore male respondents (17.1%). Approximately the same percentage of respondents at each grade level demonstrated that their parents would be excited about the technology lab class ($p = .213$). Male respondents indicated higher frequencies of parental excitement as the grade level increased.

Table 19

Parental Support for Technology Lab

	Checked	Not Checked	Not Interested	n
Male	33 (18.6%)	93 (52.5%)	51 (28.8%)	177
Female	33 (17.9%)	98 (53.3%)	53 (28.8%)	184
Freshman	14 (15.7%)	42 (47.2%)	33 (37.1%)	89
Male	5 (12.2%)	21 (51.2%)	15 (36.6%)	41
Female	9 (18.8%)	21 (43.8%)	18 (37.5%)	48
Sophomore	17 (18.9%)	44 (48.9%)	29 (32.2%)	90
Male	7 (17.1%)	20 (48.8%)	14 (34.1%)	41
Female	10 (20.4%)	24 (49.0%)	15 (30.6%)	49
Junior	14 (17.1%)	43 (52.4%)	25 (30.5%)	82
Male	7 (18.4%)	22 (57.9%)	9 (23.7%)	38
Female	7 (15.9%)	21 (47.7%)	16 (34.4%)	44
Senior	21 (21.0%)	62 (62.0%)	17 (17.0%)	100
Male	14 (24.6%)	30 (52.6%)	13 (22.8%)	57
Female	7 (16.3%)	32 (74.4%)	4 (9.3%)	43

Note. Gender: X^2 (2, N = 361) = .034, p = .983; Grade Level: X^2 (6, N = 361) = 10.593, p = .102
Gender & Grade Level: X^2 (14, N = 361) = 17.861, p = .213

Parental Support for Photography

Students were asked to select technology education courses that they thought their parents would get excited about. Photography was one of the eight classes that students could select. Many male respondents (76.3%) and approximately half of female respondents (52.8%) indicated that they did not think that their parents would get excited about the photography class. Table 20 describes the collected data that addresses this question.

A Chi-square analysis revealed that more female respondents (47.3%) than male respondents (23.7%) believed that their parents would get excited about the class ($p = .001$). The lowest level of speculated parental interest (30.3%) came from the freshman class, while the highest endorsement (42.0%) was produced by the seniors ($p = .087$). As the grade level increased, so did the percentage of students who believed that their parents would be excited about the photography course.

The largest percentage of male and female respondents who thought parents would get excited about the photography class occurred at the senior grade level. The percentage of female respondents who indicated that their parents would be excited about the class was higher at all grade levels when compared with male respondents ($p = .001$).

Table 20

Parental Support for Photography

	Checked	Not Checked	Not Interested	n
Male	42 (23.7%)	84 (47.4%)	51 (28.8%)	177
Female	87 (47.3%)	44 (23.9%)	53 (28.8%)	184
Freshman	27 (30.3%)	29 (32.6%)	33 (37.1%)	89
Male	10 (24.4%)	16 (39.0%)	15 (36.6%)	41
Female	17 (35.4%)	13 (27.1%)	18 (37.5%)	48
Sophomore	29 (32.2%)	32 (35.6%)	29 (32.2%)	90
Male	9 (22.0%)	18 (43.9%)	14 (34.1%)	41
Female	20 (40.8%)	14 (28.6%)	15 (30.6%)	49
Junior	31 (37.8%)	26 (31.7%)	25 (30.5%)	82
Male	9 (23.7%)	20 (52.6%)	9 (23.7%)	38
Female	22 (50.0%)	6 (13.6%)	16 (34.4%)	44
Senior	42 (42.0%)	41 (41.0%)	17 (17.0%)	100
Male	14 (24.6%)	30 (52.6%)	13 (22.8%)	57
Female	28 (65.1%)	11 (25.6%)	4 (9.3%)	43

Note. Gender: X^2 (2, N = 361) = 28.111, p = .001; Grade Level: X^2 (6, N = 361) = 11.030, p = .087
Gender & Grade Level: X^2 (14, N = 361) = 48.202, p = .001

Parental Support for Metalworking

Students were asked to select technology education courses that they thought their parents would get excited about. Metalworking was one of the eight classes that students could select. Many male respondents (70.6%) and an overwhelming amount of female respondents (85.9%) indicated that they did think that their parents would get excited about the metalworking class. Table 21 describes the collected data that addresses this question.

A Chi-square analysis revealed that more male respondents (29.4%) than female respondents (14.1%) believed that their parents would get excited about the class ($p = .001$). The lowest level of speculated parental interest (18.9%) came from the sophomore class, while the highest endorsement (25.0%) was produced by the seniors ($p = .095$). All grades demonstrated that most students did not believe that their parents would be excited about the metalworking course.

The largest percentage of males who thought parents would get excited occurred at the junior grade level (34.2%). The percentage of female respondents who thought that their parents would get excited about the metalworking course surprisingly increased as grade level increased. Male respondents indicated higher frequencies of speculated parental excitement at all grade levels when compared to female respondents ($p = .01$). The percentage of male respondents who indicated excitement remained similar at all grade levels.

Table 21

Parental Support for Metalworking

	Checked	Not Checked	Not Interested	n
Male	52 (29.4%)	74 (41.8%)	51 (28.8%)	177
Female	26 (14.1%)	105 (57.1%)	53 (28.8%)	184
Freshman	17 (19.1%)	39 (43.8%)	33 (37.1%)	89
Male	12 (29.3%)	14 (34.1%)	15 (36.6%)	41
Female	5 (10.4%)	25 (52.1%)	18 (37.5%)	48
Sophomore	17 (18.9%)	44 (48.9%)	29 (32.2%)	90
Male	11 (26.8%)	16 (39.0%)	14 (34.1%)	41
Female	6 (12.2%)	28 (57.1%)	15 (30.6%)	49
Junior	19 (23.2%)	38 (46.3%)	25 (30.5%)	82
Male	13 (34.2%)	16 (42.1%)	9 (23.7%)	38
Female	6 (13.6%)	22 (50.0%)	16 (34.4%)	44
Senior	25 (25.0%)	58 (58.0%)	17 (17.0%)	100
Male	16 (28.1%)	28 (49.1%)	13 (22.8%)	57
Female	9 (20.9%)	30 (69.8%)	4 (9.3%)	43

Note. Gender: X^2 (2, *N* = 361) = 13.943, p = .001; Grade Level: X^2 (6, *N* = 361) = 10.797, p = .095
Gender & Grade Level: X^2 (14, *N* = 361) = 29.273, p = .01

Parental Support for Television and Video Production

Students were asked to select technology education courses that they thought their parents would get excited about. Television and video production was one of the eight classes that students could select. Approximately two thirds of male respondents (67.2%) and female respondents (67.4%) indicated that they did think that their parents would get excited about the class. Table 22 describes the collected data that addresses this question.

A Chi-square analysis revealed that approximately one third of male respondents (32.8%) and female respondents (32.6%) believed that their parents would get excited about the class ($p = .999$). The lowest level of speculated parental interest (24.4%) came from the sophomore class, while the highest endorsement (41.0%) was produced by the seniors ($p = .05$). Upperclassmen demonstrated a greater belief that their parents would be excited about the television and video production class. All grade levels with the exception of senior indicated similar percentages of parental interest.

The largest percentage of males who thought their parents would get excited surprisingly occurred at the freshman grade level (41.5%). Senior female respondents who thought that their parents would get excited (55.8%) outnumbered senior male respondents (29.8%). Male respondents outnumbered female respondents at the freshman and junior grade levels. Sophomore male and female respondents indicated approximately equal amounts of parental excitement ($p = .05$).

Table 22

Parental Support for Television and Video Production

	Checked	Not Checked	Not Interested	n
Male	58 (32.8%)	68 (38.4%)	51 (28.8%)	177
Female	60 (32.6%)	71 (38.6%)	53 (28.8%)	184
Freshman	28 (31.5%)	28 (31.5%)	33 (37.1%)	89
Male	17 (41.5%)	9 (22.0%)	15 (36.6%)	41
Female	11 (22.9%)	19 (39.6%)	18 (37.5%)	48
Sophomore	22 (24.4%)	39 (43.3%)	29 (32.2%)	90
Male	10 (24.4%)	17 (41.5%)	14 (34.1%)	41
Female	12 (24.5%)	22 (44.9%)	15 (30.6%)	49
Junior	27 (32.9%)	30 (36.6%)	25 (30.5%)	82
Male	14 (36.8%)	15 (39.5%)	9 (23.7%)	38
Female	13 (29.5%)	15 (34.1%)	16 (36.4%)	44
Senior	41 (41.0%)	42 (42.0%)	17 (17.0%)	100
Male	17 (29.8%)	27 (47.4%)	13 (22.8%)	57
Female	24 (55.8%)	15 (34.9%)	4 (9.3%)	43

Note. Gender: X^2 (2, N = 361) = .001, p = .999; Grade Level: X^2 (6, N = 361) = 13.512, p = .05
Gender & Grade Level: X^2 (14, N = 361) = 27.028, p = .05

Parental Support for Small Engines

Students were asked to select technology education courses that they thought their parents would get excited about. The small engines course was one of the eight classes that students could select. Approximately two thirds of male respondents (68.4%) and many female respondents (79.1%) indicated that they did think that their parents would get excited about the small engines class. Table 23 describes the collected data that addresses this question.

A Chi-square analysis revealed that more male respondents (31.6%) than female respondents (20.1%) believed that their parents would get excited about the class ($p = .05$). The lowest level of speculated parental interest (21.1%) came from the sophomore class, while the highest endorsement (30.0%) was produced by the seniors ($p = .075$). All grades demonstrated that many students did not believe that their parents would be excited about the metalworking course.

The largest percentage of males who thought parents would get excited occurred at the junior grade level (39.5%). The highest percentage of female respondents who thought that their parents would get excited about the small engines course surprisingly occurred at the senior level (27.9%). Male respondents indicated higher frequencies of speculated parental excitement at all grade levels when compared to female respondents ($p = .056$). The percentage of male respondents who indicated parental excitement remained similar at all grade levels.

Table 23

Parental Support for Small Engines

	Checked	Not Checked	Not Interested	n
Male	56 (31.6%)	70 (39.5%)	51 (28.8%)	177
Female	37 (20.1%)	94 (51.1%)	53 (28.8%)	184
Freshman	21 (23.6%)	35 (39.3%)	33 (37.1%)	89
Male	12 (29.3%)	14 (34.1%)	15 (36.6%)	41
Female	9 (18.8%)	21 (43.8%)	18 (37.5%)	48
Sophomore	19 (21.1%)	42 (46.7%)	29 (32.2%)	90
Male	11 (26.8%)	16 (39.0%)	14 (34.1%)	41
Female	8 (16.3%)	26 (53.1%)	15 (30.6%)	49
Junior	23 (28.0%)	34 (41.5%)	25 (30.5%)	82
Male	15 (39.5%)	14 (36.8%)	9 (23.7%)	38
Female	8 (18.2%)	20 (45.5%)	16 (36.4%)	44
Senior	30 (30.0%)	53 (53.0%)	17 (17.0%)	100
Male	18 (31.6%)	26 (45.6%)	13 (22.8%)	57
Female	12 (27.9%)	27 (62.8%)	4 (9.3%)	43

Note. Gender: X^2 (2, N = 361) = 7.299, p = .05; Grade Level: X^2 (6, N = 361) = 11.485, p = .075
Gender & Grade Level: X^2 (14, N = 361) = 23.241, p = .056

Parental Support for Woodworking

Students were asked to select technology education courses that they thought their parents would get excited about. Woodworking was one of the eight classes that students could select. Approximately two thirds of male respondents (67.2%) and most female respondents (81.5%) indicated that they did think that their parents would get excited about the woodworking. Table 24 describes the collected data that addresses this question.

A Chi-square analysis revealed that more male respondents (32.8%) than female respondents (18.5%) believed that their parents would get excited about the class ($p = .01$). The lowest level of speculated parental interest (19.1%) came from the freshman class, while the highest endorsement (32.0%) was produced by the seniors ($p = .05$). All grades demonstrated that many students did not believe that their parents would be excited about the woodworking course. However, juniors and seniors indicated more parental excitement when compared to freshman and sophomore respondents.

The largest percentage of males who thought parents would get excited occurred at the junior grade level (42.1%). The percentage of female respondents who thought that their parents would get excited about the woodworking course surprisingly increased as grade level increased. Male respondents indicated higher frequencies of speculated parental excitement at all grade levels when compared to female respondents ($p = .05$).

Table 24

Parental Support for Woodworking

	Checked	Not Checked	Not Interested	n
Male	58 (32.8%)	68 (38.4%)	51 (28.8%)	177
Female	34 (18.5%)	97 (52.7%)	53 (28.8%)	184
Freshman	17 (19.1%)	39 (43.8%)	33 (37.1%)	89
Male	11 (26.8%)	15 (36.6%)	15 (36.6%)	41
Female	6 (12.5%)	24 (50.0%)	18 (37.5%)	48
Sophomore	18 (20.0%)	43 (47.8%)	29 (32.2%)	90
Male	11 (26.8%)	16 (39.0%)	14 (34.1%)	41
Female	7 (14.3%)	27 (55.1%)	15 (30.6%)	49
Junior	25 (30.5%)	32 (39.0%)	25 (30.5%)	82
Male	16 (42.1%)	13 (34.2%)	9 (23.7%)	38
Female	9 (20.5%)	19 (43.2%)	16 (36.4%)	44
Senior	32 (32.0%)	51 (51.0%)	17 (17.0%)	100
Male	20 (35.1%)	24 (42.1%)	13 (22.8%)	57
Female	12 (27.9%)	27 (62.8%)	4 (9.3%)	43

Note. Gender: X^2 (2, N = 361) = 11.265, p = .01; Grade Level: X^2 (6, N = 361) = 13.922, p = .05
Gender & Grade Level: X^2 (14, N = 361) = 28.907, p = .05

Parental Support for Architectural Design

Students were asked to select technology education courses that they thought their parents would get excited about. Architectural design was one of the eight classes that students could select. Approximately one third of male respondents (30.5%) and female respondents (32.6%) indicated that they thought their parents would get excited about the architectural design. Table 25 describes the collected data that addresses this question.

A Chi-square analysis revealed that approximately one third of male respondents (30.5%) and female respondents (32.6%) believed that their parents would get excited about the class ($p = .893$). The lowest level of speculated parental excitement (19.1%) came from the freshman class, while the highest endorsement (37.8%) was produced by the sophomores ($p = .01$). All grades with the exception of freshman indicated that at least one third believed that parents would be excited about the architectural design class.

The largest percentage of males who thought parents would get excited about the course occurred at the junior grade level (47.4%) and female respondents indicated (46.9%) at the sophomore level. The percentage of female respondents who thought that their parents would get excited about the architectural design course surprisingly was higher when compared to males at the sophomore and senior grade levels ($p = .01$). Freshman students indicated similar levels of perceived parental excitement for the course.

Table 25

Parental Support for Architectural Design

	Checked	Not Checked	Not Interested	n
Male	54 (30.5%)	72 (40.7%)	51 (28.8%)	177
Female	60 (32.6%)	71 (38.6%)	53 (28.8%)	184
Freshman	17 (19.1%)	39 (43.8%)	33 (37.1%)	89
Male	8 (19.5%)	18 (43.9%)	15 (36.6%)	41
Female	9 (18.8%)	21 (43.8%)	18 (37.5%)	48
Sophomore	34 (37.8%)	27 (30.0%)	29 (32.2%)	90
Male	11 (26.8%)	16 (39.0%)	14 (34.1%)	41
Female	23 (46.9%)	11 (22.4%)	15 (30.6%)	49
Junior	29 (35.4%)	28 (34.1%)	25 (30.5%)	82
Male	18 (47.4%)	11 (28.9%)	9 (23.7%)	38
Female	11 (25.0%)	17 (38.6%)	16 (36.4%)	44
Senior	34 (34.0%)	49 (49.0%)	17 (17.0%)	100
Male	17 (29.8%)	27 (47.4%)	13 (22.8%)	57
Female	17 (39.5%)	22 (51.2%)	4 (9.3%)	43

Note. Gender: X^2 (2, N = 361) = .226, p = .893; Grade Level: X^2 (6, N = 361) = 18.779, p = .01
Gender & Grade Level: X^2 (14, N = 361) = 30.517, p = .01

Engineering Drafting With a Friend

Students were asked to select technology education courses that they would enroll in only if a friend would also enroll in the class. Engineering drafting was one of the eight classes that students could select. Many male respondents (75.8%) and most female respondents (85.9%) indicated that they would either take engineering drafting without a friend or were not interested in the course. Table 26 describes the collected data that addresses this question.

A Chi-square analysis revealed that more male respondents (24.2%) than female respondents (14.1%) indicated that they would only take engineering drafting if a friend would also take the class ($p = .05$). The lowest indicated number of students willing to take the course only if a friend would also sign up (12.4%) came from the freshman class. The highest endorsement for taking the course (24.2%) was produced by the sophomores ($p = .381$). All grades demonstrated that many students would not take the course unless a friend would also sign up.

The largest percentage of males who would take the class only with a friend occurred at the junior grade level (28.9%). The percentage of female respondents who would only take the class with a friend was surprisingly low throughout all four grade levels ($p = .304$). Male students were more likely to take this class only if a friend would also sign up for it.

Table 26

Engineering Drafting With a Friend

	Checked	Not Checked	Not Interested	n
Male	43 (24.2%)	104 (58.4%)	31 (17.4%)	178
Female	26 (14.1%)	129 (70.1%)	29 (15.8%)	184
Freshman	11 (12.4%)	61 (68.5%)	17 (19.1%)	89
Male	6 (14.8%)	26 (63.4%)	9 (22.0%)	41
Female	5 (10.4%)	35 (72.9%)	8 (16.7%)	48
Sophomore	22 (24.2%)	55 (60.4%)	14 (15.4%)	91
Male	11 (26.2%)	25 (59.5%)	6 (14.3%)	42
Female	11 (22.4%)	30 (61.2%)	8 (16.3%)	49
Junior	15 (18.3%)	57 (69.5%)	10 (12.2%)	82
Male	11 (28.9%)	23 (60.5%)	4 (10.5%)	38
Female	4 (9.1%)	34 (77.3%)	6 (13.6%)	44
Senior	21 (21.0%)	60 (60.0%)	19 (19.0%)	100
Male	15 (26.3%)	30 (52.6%)	12 (21.1%)	57
Female	6 (14.0%)	30 (69.8%)	7 (16.3%)	43

Note. Gender: $X^2(2, N = 362) = 6.840$, $p = .05$; Grade Level: $X^2(6, N = 362) = 6.385$, $p = .381$
Gender & Grade Level: $X^2(14, N = 362) = 16.153$, $p = .304$

Technology Lab With a Friend

Students were asked to select technology education courses that they would enroll in only if a friend would also enroll in the class. Technology lab was one of the eight classes that students could select. Most male respondents (80.3%) and many female respondents (78.3%) indicated that they would either take engineering drafting without a friend or were not interested in the course. Table 27 describes the collected data that addresses this question.

A Chi-square analysis revealed that some male respondents (19.7%) and female respondents (21.7%) indicated that they would only take engineering drafting if a friend would also take the class ($p = .844$). The lowest indicated number of students willing to take the course only if a friend would also sign up (16.9%) came from the freshman class. The highest endorsement for taking the course only with a friend (25.3%) was produced by the sophomores ($p = .489$). All grades demonstrated that many students would not take the course unless a friend would also sign up.

The largest percentage of males who would take the class only with a friend occurred at the senior grade level (26.3%). The percentage of female respondents who would only take the class with a friend was higher at the freshman and sophomore grade levels when compared to the junior and senior grades ($p = .715$).

Table 27

Technology Lab With a Friend

	Checked	Not Checked	Not Interested	n
Male	35 (19.7%)	112 (62.9%)	31 (17.4%)	178
Female	40 (21.7%)	115 (62.5%)	29 (15.8%)	184
Freshman	15 (16.9%)	57 (64.0%)	17 (19.1%)	89
Male	4 (9.8%)	28 (68.3%)	9 (22.0%)	41
Female	11 (22.9%)	29 (60.4%)	8 (16.7%)	48
Sophomore	23 (25.3%)	54 (59.3%)	14 (15.4%)	91
Male	9 (21.4%)	27 (64.3%)	6 (14.3%)	42
Female	14 (26.8%)	27 (55.1%)	8 (16.3%)	49
Junior	14 (17.1%)	58 (70.7%)	10 (12.2%)	82
Male	7 (18.4%)	27 (71.1%)	4 (10.5%)	38
Female	7 (15.9%)	31 (70.5%)	6 (13.6%)	44
Senior	23 (23.0%)	58 (58.0%)	19 (19.0%)	100
Male	15 (26.3%)	30 (52.6%)	12 (21.1%)	57
Female	8 (18.6%)	28 (65.1%)	7 (16.3%)	43

Note. Gender: X^2 (2, N = 362) = .340, p = .844; Grade Level: X^2 (6, N = 362) = 5.440, p = .489
Gender & Grade Level: X^2 (14, N = 362) = 10.630, p = .715

Photography With a Friend

Students were asked to select technology education courses that they would enroll in only if a friend would also enroll in the class. Photography was one of the eight classes that students could select. Over half of the male respondents (59.6%) and approximately two thirds of female respondents (66.3%) indicated that they would either take photography without a friend or were not interested in the course. Table 28 describes the collected data that addresses this question.

A Chi-square analysis revealed that a minority of male respondents (40.4%) and approximately one third of female respondents (33.7%) indicated that they would only take photography if a friend would also take the class ($p = .267$). The lowest indicated number of students willing to take the course only if a friend would also sign up (30.8%) came from the sophomore class. The highest endorsement for taking the course only with a friend (40.4%) was produced by the freshman ($p = .482$). All grades demonstrated that over half of the students would not take the course unless a friend would also sign up.

The largest percentage of males who would take the class only with a friend occurred at the sophomore grade level (47.6%). The percentage of female respondents who would only take the class with a friend was higher than that of the male respondents at the junior and senior levels ($p = .157$).

Table 28

Photography With a Friend

	Checked	Not Checked	Not Interested	n
Male	72 (40.4%)	75 (42.1%)	31 (17.4%)	178
Female	62 (33.7%)	93 (50.5%)	29 (15.8%)	184
Freshman	36 (40.4%)	36 (40.4%)	17 (19.1%)	89
Male	18 (43.9%)	14 (34.1)	9 (22.0%)	41
Female	18 (37.5%)	22 (45.8%)	8 (16.7%)	48
Sophomore	28 (30.8%)	49 (53.8%)	14 (15.4%)	91
Male	20 (47.6%)	16 (38.1%)	6 (14.3%)	42
Female	8 (16.3%)	33 (67.3%)	8 (16.3%)	49
Junior	31 (37.8%)	41 (50.0%)	10 (12.2%)	82
Male	12 (31.6%)	22 (57.9%)	4 (10.5%)	38
Female	19 (43.2%)	19 (43.2%)	6 (13.6%)	44
Senior	39 (39.0%)	42 (42.0%)	19 (19.0%)	100
Male	22 (38.6%)	23 (40.4%)	12 (21.1%)	57
Female	17 (39.5%)	19 (44.2%)	7 (16.3%)	43

Note. Gender: X^2 (2, *N* = 362) = 2.643, p = .267; Grade Level: X^2 (6, *N* = 362) = 5.500, p = .482
Gender & Grade Level: X^2 (14, *N* = 362) = 19.209, p = .157

Metalworking With a Friend

Students were asked to select technology education courses that they would enroll in only if a friend would also enroll in the class. Metalworking was one of the eight classes that students could select. Many male respondents (73.6%) and female respondents (73.4%) indicated that they would either take metalworking without a friend or were not interested in the course. Table 29 describes the collected data that addresses this question.

A Chi-square analysis revealed that some male respondents (26.4%) and female respondents (26.6%) indicated that they would only take metalworking if a friend would also take the class ($p = .912$). The lowest indicated number of students willing to take the course only if a friend would also sign up (18.0%) came from the freshman class. The highest endorsement for taking the course only with a friend (33.0%) was produced by the sophomores ($p = .152$). All grades demonstrated that many students would not take the course unless a friend would also sign up.

The largest percentage of males who would take the class only with a friend occurred at the senior grade level (36.8%). The percentage of female respondents who would only take the class with a friend was much higher at the sophomore level compared to any other grade. Freshman and senior male respondents were less likely to take the metalworking class without a friend when compared to female respondents at the same grade level. However, sophomore and junior females were less likely to sign up for the course without a friend when compared to males at those grade levels ($p = .208$).

Table 29

Metalworking With a Friend

	Checked	Not Checked	Not Interested	n
Male	47 (26.4%)	100 (56.2%)	31 (17.4%)	178
Female	49 (26.6%)	106 (57.6%)	29 (15.8%)	184
Freshman	16 (18.0%)	56 (62.9%)	17 (19.1%)	89
Male	8 (19.5%)	24 (58.5%)	9 (22.0%)	41
Female	8 (16.7%)	32 (66.7%)	8 (16.7%)	48
Sophomore	30 (33.0%)	47 (51.6%)	14 (15.4%)	91
Male	10 (23.8%)	26 (61.9%)	6 (14.3%)	42
Female	20 (40.8%)	21 (42.9%)	8 (16.3%)	49
Junior	19 (23.2%)	53 (64.6%)	10 (12.2%)	82
Male	8 (21.1%)	26 (68.4%)	4 (10.5%)	38
Female	11 (25.0%)	27 (61.4%)	6 (13.6%)	44
Senior	31 (31.0%)	50 (50.0%)	19 (19.0%)	100
Male	21 (36.8%)	24 (42.1%)	12 (21.1%)	57
Female	10 (23.3%)	26 (60.5%)	7 (16.3%)	43

Note. Gender: X^2 (2, *N* = 362) = .184, p = .912; Grade Level: X^2 (6, *N* = 362) = 9.410, p = .152
Gender & Grade Level: X^2 (14, *N* = 362) = 17.984, p = .208

Television and Video Production With a Friend

Students were asked to select technology education courses that they would enroll in only if a friend would also enroll in the class. Television and video production was one of the eight classes that students could select. Over half of the male respondents (61.2%) and female respondents (55.4%) indicated that they would either take television and video production without a friend or were not interested in the course. Table 30 describes the collected data that addresses this question.

A Chi-square analysis revealed that over one third of the male respondents (38.8%) and a minority of female respondents (44.6%) indicated that they would only take television and video production if a friend would also take the class ($p = .535$). The lowest indicated number of students willing to take the course only if a friend would also sign up (31.5%) came from the freshman class. The highest endorsement for taking the course only with a friend (46.3%) was produced by the juniors ($p = .336$). All grades demonstrated that over half of the students would not take the course unless a friend would also sign up.

The largest percentage of males who would take the class only with a friend occurred at the junior level (44.7%). The percentage of female respondents who would only take the class with a friend (31.3%) was much lower at the freshman level compared to any other grade. Female respondents were less likely to take the television and video production class without a friend when compared to male respondents at all grade levels with the exception of the freshmen ($p = .719$).

Table 30

Television and Video Production With a Friend

	Checked	Not Checked	Not Interested	n
Male	69 (38.8%)	78 (43.8%)	31 (17.4%)	178
Female	82 (44.6%)	73 (39.7%)	29 (15.8%)	184
Freshman	28 (31.5%)	44 (49.4%)	17 (19.1%)	89
Male	13 (31.7%)	19 (46.3%)	9 (22.0%)	41
Female	15 (31.3%)	25 (52.1%)	8 (16.7%)	48
Sophomore	40 (44.0%)	37 (40.7%)	14 (15.4%)	91
Male	16 (38.1%)	20 (47.6%)	6 (14.3%)	42
Female	24 (49.0%)	17 (34.7%)	8 (16.3%)	49
Junior	38 (46.3%)	34 (41.5%)	10 (12.2%)	82
Male	17 (44.7%)	17 (44.7%)	4 (10.5%)	38
Female	21 (47.7%)	17 (38.6%)	6 (13.6%)	44
Senior	45 (45.0%)	36 (36.0%)	19 (19.0%)	100
Male	23 (40.4%)	22 (38.6%)	12 (21.1%)	57
Female	22 (51.2%)	14 (32.6%)	7 (16.3%)	43

Note. Gender: X^2 (2, N = 362) = 1.252, p = .535; Grade Level: X^2 (6, N = 362) = 6.838, p = .336
Gender & Grade Level: X^2 (14, N = 362) = 10.574, p = .719

Small Engines With a Friend

Students were asked to select technology education courses that they would enroll in only if a friend would also enroll in the class. The small engines course was one of the eight classes that students could select. Many male respondents (73.6%) and most of the female respondents (81.5%) indicated that they would either take small engines without a friend or were not interested in the course. Table 31 describes the collected data that addresses this question.

A Chi-square analysis revealed that some male respondents (26.4%) and female respondents (18.5%) indicated that they would only take small engines if a friend would also take the class ($p = .132$). The lowest indicated number of students willing to take the course only if a friend would also sign up (12.4%) came from the freshman class. The highest endorsement for taking the course only with a friend (29.7%) was produced by the sophomores ($p = .132$). The sophomore, junior, and senior classes demonstrated that many students would not take the course unless a friend would also sign up. The freshman class demonstrated that most students would not take the class without a friend.

The largest percentage of males who would take the class only with a friend (39.5%) occurred at the junior grade level. The percentage of female respondents who would only take the class with a friend was much higher at the sophomore level compared to any other female grade. Male respondents were less likely to take the small engines class without a friend when compared to female respondents at all grades with the exception of the sophomore grade level ($p = .05$).

Table 31

Small Engines With a Friend

	Checked	Not Checked	Not Interested	n
Male	47 (26.4%)	100 (56.2%)	31 (17.4%)	178
Female	34 (18.5%)	121 (65.8%)	29 (15.8%)	184
Freshman	11 (12.4%)	61 (68.5%)	17 (19.1%)	89
Male	6 (14.6%)	26 (63.4%)	9 (22.0%)	41
Female	5 (10.4%)	35 (72.9%)	8 (16.7%)	48
Sophomore	27 (29.7%)	50 (54.9%)	14 (15.4%)	91
Male	9 (21.4%)	27 (64.3%)	6 (14.3%)	42
Female	18 (36.7%)	23 (46.9%)	8 (16.3%)	49
Junior	19 (23.2%)	53 (64.6%)	10 (12.2%)	82
Male	15 (39.5%)	19 (50.0%)	4 (10.5%)	38
Female	4 (9.1%)	34 (77.3%)	6 (13.6%)	44
Senior	24 (24.0%)	57 (57.0%)	19 (19.0%)	100
Male	17 (29.8%)	28 (49.1%)	12 (21.1%)	57
Female	7 (16.3%)	29 (67.4%)	7 (16.3%)	43

Note. Gender: X^2 (2, N = 362) = 4.050, p = .132; Grade Level: X^2 (6, N = 362) = 9.834, p = .132
Gender & Grade Level: X^2 (14, N = 362) = 28.958, p = .05

Woodworking With a Friend

Students were asked to select technology education courses that they would enroll in only if a friend would also enroll in the class. Woodworking was one of the eight classes that students could select. Many male respondents (74.7%) and approximately two thirds of the female respondents (68.5%) indicated that they would either take woodworking without a friend or were not interested in the course. Table 32 describes the collected data that addresses this question.

A Chi-square analysis revealed that some male respondents (25.3%) and approximately one third of female respondents (31.5%) indicated that they would only take woodworking if a friend would also take the class ($p = .420$). The lowest indicated number of students willing to take the course only if a friend would also sign up (22.0%) came from the junior class. The highest endorsement for taking the course only with a friend (33.0%) was produced by the sophomores ($p = .390$). All of the classes demonstrated that many students would not take the course unless a friend would also sign up.

The largest percentage of males who would take the class only with a friend (29.3%) occurred at the freshman grade level. The largest percentage of female respondents who would only take the class with a friend (44.9%) was at the sophomore level ($p = .272$). Furthermore, at the sophomore level, males responded with their lowest percentage while the females indicated their highest percentage.

Table 32

Woodworking With a Friend

	Checked	Not Checked	Not Interested	n
Male	45 (25.3%)	102 (57.3%)	31 (17.4%)	178
Female	58 (31.5%)	97 (52.7%)	29 (15.8%)	184
Freshman	24 (27.0%)	48 (53.9%)	17 (19.1%)	89
Male	12 (29.3%)	20 (48.8%)	9 (22.0%)	41
Female	12 (25.0%)	28 (58.3%)	8 (16.7%)	48
Sophomore	30 (33.0%)	47 (51.6%)	14 (15.4%)	91
Male	8 (19.0%)	28 (66.7%)	6 (14.3%)	42
Female	22 (44.9%)	19 (38.8%)	8 (16.3%)	49
Junior	18 (22.0%)	54 (65.9%)	10 (12.2%)	82
Male	9 (23.7%)	25 (65.8%)	4 (10.5%)	38
Female	9 (20.5%)	29 (65.9%)	6 (13.6%)	44
Senior	31 (31.0%)	50 (50.0%)	19 (19.0%)	100
Male	16 (28.1%)	29 (50.9%)	12 (21.1%)	57
Female	15 (34.9%)	21 (48.8%)	7 (16.3%)	43

Note. Gender: X^2 (2, N = 362) = 1.734, p = .420; Grade Level: X^2 (6, N = 362) = 6.308, p = .390
Gender & Grade Level: X^2 (14, N = 362) = 16.707, p = .272

Architectural Design With a Friend

Students were asked to select technology education courses that they would enroll in only if a friend would also enroll in the class. Architectural design was one of the eight classes that students could select. Many male respondents (78.1%) and female respondents (77.7%) indicated that they would either take architectural design without a friend or were not interested in the course. Table 33 describes the collected data that addresses this question.

A Chi-square analysis revealed that some male respondents (21.9%) and female respondents (22.3%) indicated that they would only take architectural design if a friend would also take the class ($p = .914$). The lowest indicated number of students willing to take the course only if a friend would also sign up (19.1%) came from the freshman class. The highest endorsement for taking the course only with a friend (27.0%) was produced by the seniors ($p = .582$). All of the classes demonstrated that many students would not take the course unless a friend would also sign up.

The largest percentage of males who would take the class only with a friend (28.1%) occurred at the senior grade level. The largest percentage of female respondents who would only take the class with a friend (25.6%) was at the senior level ($p = .949$). Furthermore, as the female grade level increased so did the indication that they would only take the architectural design class with a friend.

Table 33

Architectural Design With a Friend

	Checked	Not Checked	Not Interested	n
Male	39 (21.9%)	108 (60.7%)	31 (17.4%)	178
Female	41 (22.3%)	114 (62.0%)	29 (15.8%)	184
Freshman	17 (19.1%)	55 (61.8%)	17 (19.1%)	89
Male	8 (19.5%)	24 (58.5%)	9 (22.0%)	41
Female	9 (18.8%)	31 (64.6%)	8 (16.7%)	48
Sophomore	19 (20.9%)	58 (63.7%)	14 (15.4%)	91
Male	8 (19.0%)	28 (66.7%)	6 (14.3%)	42
Female	11 (22.4%)	30 (61.2%)	8 (16.3%)	49
Junior	17 (20.7%)	55 (67.1%)	10 (12.2%)	82
Male	7 (18.4%)	27 (71.1%)	4 (10.5%)	38
Female	10 (22.7%)	28 (63.6%)	6 (13.6%)	44
Senior	27 (27.0%)	54 (54.0%)	19 (19.0%)	100
Male	16 (28.1%)	29 (50.9%)	12 (21.1%)	57
Female	11 (25.6%)	25 (58.1%)	7 (16.3%)	43

Note. Gender: X^2 (2, N = 362) = .179, p = .914; Grade Level: X^2 (6, N = 362) = 4.710, p = .582
Gender & Grade Level: X^2 (14, N = 362) = 6.594, p = .949

Interests and Abilities: Engineering Drafting

Students were asked to select technology education courses that they have been encouraged to take by guidance counselors based on their interests and abilities. Engineering drafting was one of the eight classes that students could select. Most of the male respondents (86.0%) and an overwhelming percentage of female respondents (96.2%) demonstrated that they had not been encouraged to take the engineering drafting course by guidance counselors. Table 34 describes the collected data that addresses this question.

A Chi-square analysis revealed that more male respondents (14.0%) than female respondents (3.8%) indicated that they were encouraged to take the engineering drafting course ($p = .01$). The lowest level of being encouraged to take the class (4.5%) came from the freshman class. The highest percentage of being encouraged to take engineering drafting (13.4%) was produced by the juniors ($p = .102$). All of the classes demonstrated that either most or an overwhelming number of students had not been encouraged to take the course based on their interests and abilities.

Results according to gender by each grade level were inconclusive due to the extremely low number of respondents who were encouraged to enroll in the engineering drafting course by guidance counselors.

Table 34

Interests and Abilities: Engineering Drafting

	Checked	Not Checked	Not Interested	n
Male	25 (14.0%)	65 (36.5%)	88 (49.4%)	178
Female	7 (3.8%)	67 (36.4%)	110 (59.8%)	184
Freshman	4 (4.5%)	36 (40.4%)	49 (55.1%)	89
Male	3 (7.3%)	14 (34.1%)	24 (58.5%)	41
Female	1 (2.1%)	22 (45.8%)	25 (52.1%)	48
Sophomore	7 (7.7%)	30 (33.0%)	54 (59.3%)	91
Male	4 (9.5%)	15 (35.7%)	23 (54.8%)	42
Female	3 (6.1%)	15 (30.6%)	31 (63.3%)	49
Junior	11 (13.4%)	22 (26.8%)	49 (59.8%)	82
Male	9 (23.7%)	11 (28.9%)	18 (47.4%)	38
Female	2 (4.5%)	11 (25.0%)	31 (70.5%)	44
Senior	10 (10.0%)	44 (44.0%)	46 (46.0%)	100
Male	9 (15.8%)	25 (43.9%)	23 (40.4%)	57
Female	1 (2.3%)	19 (44.2%)	23 (53.5%)	43

Note. Gender: X^2 (2, N = 362) = 12.504, p = .01; Grade Level: X^2 (6, N = 362) = 10.596, p = .102

Interests and Abilities: Technology Lab

Students were asked to select technology education courses that they have been encouraged to take by guidance counselors based on their interests and abilities. Technology lab was one of the eight classes that students could select. Most of the male respondents (86.5%) and an overwhelming percentage of female respondents (93.5%) demonstrated that they had not been encouraged to take the technology lab course by guidance counselors. Table 35 describes the collected data that addresses this question.

A Chi-square analysis revealed that more male respondents (13.5%) than female respondents (6.5%) indicated that they were encouraged to take the technology lab course (p =.05). The lowest level of being encouraged to take the class (4.5%) came from the freshman class. The highest percentage of being encouraged to take technology lab (13.2%) was produced by the juniors (p =.112). All of the classes demonstrated that either most or an overwhelming number of students had not been encouraged to take the course based on their interests and abilities.

Results according to gender by each grade level were inconclusive due to the extremely low number of respondents who were encouraged to enroll in the technology lab course by guidance counselors.

Table 35

Interests and Abilities: Technology Lab

	Checked	Not Checked	Not Interested	n
Male	24 (13.5%)	66 (37.1%)	88 (49.4%)	178
Female	12 (6.5%)	62 (33.7%)	110 (59.8%)	184
Freshman	4 (4.5%)	36 (40.4%)	49 (55.1%)	89
Male	1 (2.4%)	16 (39.0%)	24 (58.5%)	41
Female	3 (6.3%)	20 (41.7%)	25 (52.1%)	48
Sophomore	12 (13.2%)	25 (27.5%)	54 (59.3%)	91
Male	8 (19.0%)	11 (26.2%)	23 (54.8%)	42
Female	4 (8.2%)	14 (28.6%)	31 (63.3%)	49
Junior	7 (8.5%)	26 (31.7%)	49 (59.8%)	82
Male	5 (13.2%)	15 (39.5%)	18 (47.4%)	38
Female	2 (4.5%)	11 (25.0%)	31 (70.5%)	44
Senior	13 (13.0%)	41 (41.0%)	46 (46.0%)	100
Male	10 (17.5%)	24 (42.1%)	23 (40.4%)	57
Female	3 (7.0%)	17 (39.5%)	23 (53.5%)	43

Note. Gender: X^2 (2, N = 362) = 6.472, p = .05; Grade Level: X^2 (6, N = 362) = 10.312, p = .112

Interests and Abilities: Photography

Students were asked to select technology education courses that they have been encouraged to take by guidance counselors based on their interests and abilities. Photography was one of the eight classes that students could select. Most of the male respondents (84.8%) and many of the female respondents (72.3%) demonstrated that they had not been encouraged to take photography by guidance counselors. Table 36 describes the collected data that addresses this question.

A Chi-square analysis revealed that more female respondents (27.7%) than male respondents (15.2%) indicated that they were encouraged to take photography ($p = .001$). The lowest level of being encouraged to take the class (15.9%) came from the junior class. The highest percentage of being encouraged to take photography (30.3%) was produced by the freshmen ($p = .05$). All of the classes demonstrated that either many or most of the students had not been encouraged to take the course by guidance counselors based on their interests and abilities.

The students who were encouraged the least among all grade levels (7.9%) to enroll in the photography course were junior males. Female respondents were encouraged to take photography more than male respondents at every grade level ($p = .001$). Male juniors and seniors were encouraged the least to enroll in the photography class by guidance counselors based on their interests and abilities.

Table 36

Interests and Abilities: Photography

	Checked	Not Checked	Not Interested	n
Male	27 (15.2%)	63 (35.4%)	88 (49.4%)	178
Female	51 (27.7%)	23 (12.5%)	110 (59.8%)	184
Freshman	27 (30.3%)	13 (14.6%)	49 (55.1%)	89
Male	9 (22.0%)	8 (19.5%)	24 (58.5%)	41
Female	18 (37.5%)	5 (10.4%)	25 (52.1%)	48
Sophomore	16 (17.6%)	21 (23.1%)	54 (59.3%)	91
Male	7 (16.7%)	12 (28.6%)	23 (54.8%)	42
Female	9 (18.4%)	9 (18.4%)	31 (63.3%)	49
Junior	13 (15.9%)	20 (24.4%)	49 (59.8%)	82
Male	3 (7.9%)	17 (44.7%)	18 (47.4%)	38
Female	10 (22.7%)	3 (6.8%)	31 (70.5%)	44
Senior	22 (22.0%)	32 (32.0%)	46 (46.0%)	100
Male	8 (14.0%)	26 (45.6%)	23 (40.4%)	57
Female	14 (32.6%)	6 (14.0%)	23 (53.5%)	43

Note. Gender: $X^2 (2, N = 362) = 28.342$, $p = .001$; Grade Level: $X^2 (6, N = 362) = 13.254$, $p = .039$
Gender & Grade Level: $X^2 (14, N = 362) = 49.422$, $p = .001$

Interests and Abilities: Metalworking

Students were asked to select technology education courses that they have been encouraged to take by guidance counselors based on their interests and abilities. Metalworking was one of the eight classes that students could select. Most of the male respondents (81.5%) and an overwhelming percentage of the female respondents (94.0%) demonstrated that they had not been encouraged to take metalworking by guidance counselors. Table 37 describes the collected data that addresses this question.

A Chi-square analysis revealed that more male respondents (18.5%) than female respondents (6.0%) indicated that they were encouraged to take metalworking ($p = .001$). The lowest level of being encouraged to take the class (7.7%) came from the sophomore class. The highest percentage of being encouraged to take metalworking (15.9%) was produced by the juniors ($p = .212$). All of the classes demonstrated that either most or an overwhelming percentage of the students had not been encouraged to take the metalworking course by guidance counselors based on their interests and abilities.

The students who were encouraged the least among all grade levels (4.1%) to enroll in the metalworking course were sophomore females. Female respondents were encouraged to take metalworking less than male respondents at every grade level ($p = .05$). Female freshman and sophomores were encouraged the least to enroll in the metalworking class by guidance counselors based on their interests and abilities.

Table 37

Interests and Abilities: Metalworking

	Checked	Not Checked	Not Interested	n
Male	33 (18.5%)	57 (32.0%)	88 (49.4%)	178
Female	11 (6.0%)	63 (34.2%)	110 (59.8%)	184
Freshman	11 (12.4%)	29 (32.6%)	49 (55.1%)	89
Male	9 (22.0%)	8 (19.5%)	24 (58.5%)	41
Female	2 (4.2%)	21 (43.8%)	25 (52.1%)	48
Sophomore	7 (7.7%)	30 (33.0%)	54 (59.3%)	91
Male	5 (11.9%)	14 (33.3%)	23 (54.8%)	42
Female	2 (4.1%)	16 (32.7%)	31 (63.3%)	49
Junior	13 (15.9%)	20 (24.4%)	49 (59.8%)	82
Male	9 (23.7%)	11 (28.9%)	18 (47.4%)	38
Female	4 (9.1%)	9 (20.5%)	31 (70.5%)	44
Senior	13 (13.0%)	41 (41.0%)	46 (46.0%)	100
Male	10 (17.5%)	24 (42.1%)	23 (40.4%)	57
Female	3 (7.0%)	17 (39.5%)	23 (53.5%)	43

Note. Gender: X^2 (2, N = 362) = 13.649, p = .001; Grade Level: X^2 (6, N = 362) = 8.370, p = .212
Gender & Grade Level: X^2 (14, N = 362) = 28.729, p = .05

Interests and Abilities: Television and Video Production

Students were asked to select technology education courses that they have been encouraged to take by guidance counselors based on their interests and abilities. Television and video production was one of the eight classes that students could select. Most of the male respondents (83.7%) and female respondents (87.5%) demonstrated that they had not been encouraged to take television and video production by guidance counselors. Table 38 describes the collected data that addresses this question.

A Chi-square analysis revealed that some of the male respondents (16.3%) and female respondents (12.5%) indicated that they were encouraged to take television and video production ($p = .140$). The lowest level of being encouraged to take the class (7.7%) came from the sophomore class. The highest percentage of being encouraged to take television and video production (19.0%) was produced by the seniors ($p = .212$). All of the classes demonstrated that either most or an overwhelming percentage of the students had not been encouraged to take the television and video production course by guidance counselors based on their interests and abilities.

The students who were encouraged the least among all grade levels (6.1%) to enroll in the course were sophomore females. Female respondents were encouraged to take television and video production less than male respondents at every grade level with the exception of juniors ($p = .09$). Female freshman and sophomores were encouraged the least to enroll in the class by guidance counselors based on their interests and abilities.

Table 38

Interests and Abilities: Television and Video Production

	Checked	Not Checked	Not Interested	n
Male	29 (16.3%)	61 (34.3%)	88 (49.4%)	178
Female	23 (12.5%)	51 (27.7%)	110 (59.8%)	184
Freshman	13 (14.6%)	27 (30.3%)	49 (55.1%)	89
Male	8 (19.5%)	9 (22.0%)	24 (58.5%)	41
Female	5 (10.4%)	18 (37.5%)	25 (52.1%)	48
Sophomore	7 (7.7%)	30 (33.0%)	54 (59.3%)	91
Male	4 (9.5%)	15 (35.7%)	23 (54.8%)	42
Female	3 (6.1%)	15 (30.6%)	31 (63.3%)	49
Junior	13 (15.9%)	20 (24.4%)	49 (59.8%)	82
Male	5 (13.2%)	15 (39.5%)	18 (47.4%)	38
Female	8 (18.2%)	5 (11.4%)	31 (70.5%)	44
Senior	19 (19.0%)	35 (35.0%)	46 (46.0%)	100
Male	12 (21.1%)	22 (38.6%)	23 (40.4%)	57
Female	7 (16.3%)	13 (30.2%)	23 (53.5%)	43

Note. Gender: X^2 (2, N = 362) = 3.931, p = .140; Grade Level: X^2 (6, N = 362) = 8.375, p = .212
Gender & Grade Level: X^2 (14, N = 362) = 21.485, p = .090

Interests and Abilities: Small Engines

Students were asked to select technology education courses that they have been encouraged to take by guidance counselors based on their interests and abilities. The small engines course was one of the eight classes that students could select. Most of the male respondents (84.3%) and an overwhelming percentage of female respondents (95.7%) demonstrated that they had not been encouraged to take small engines by guidance counselors. Table 39 describes the collected data that addresses this question.

A Chi-square analysis revealed that more male respondents (15.7%) than female respondents (4.3%) indicated that they were encouraged to take small engines ($p = .001$). The lowest level of being encouraged to take the class (4.4%) came from the sophomore class. The highest percentage of being encouraged to enroll in small engines (13.0%) was produced by the seniors ($p = .206$). All of the classes demonstrated that either most or an overwhelming percentage of the students had not been encouraged to take the small engines course by guidance counselors based on their interests and abilities.

Results according to gender by each grade level were inconclusive due to the extremely low number of respondents who were encouraged to enroll in the small engines course by guidance counselors.

Table 39

Interests and Abilities: Small Engines

	Checked	Not Checked	Not Interested	n
Male	20 (15.7%)	62 (34.8%)	88 (49.4%)	178
Female	8 (4.3%)	66 (35.9%)	110 (59.8%)	184
Freshman	9 (10.1%)	31 (34.8%)	49 (55.1%)	89
Male	7 (17.1%)	10 (24.4%)	24 (58.5%)	41
Female	2 (4.2%)	21 (43.8%)	25 (52.1%)	48
Sophomore	4 (4.4%)	33 (36.3%)	54 (59.3%)	91
Male	3 (7.1%)	16 (38.1%)	23 (54.8%)	42
Female	1 (2.0%)	17 (34.7%)	31 (63.3%)	49
Junior	10 (12.2%)	23 (28.0%)	49 (59.8%)	82
Male	7 (18.4%)	13 (34.2%)	18 (47.4%)	38
Female	3 (6.8%)	10 (22.7%)	31 (70.5%)	44
Senior	13 (13.0%)	41 (41.0%)	46 (46.0%)	100
Male	11 (19.3%)	23 (40.4%)	23 (40.4%)	57
Female	2 (4.7%)	18 (41.9%)	23 (53.5%)	43

Note. Gender: $X^2 (2, N = 362) = 13.585$, $p = .001$; Grade Level: $X^2 (6, N = 362) = 8.471$, $p = .206$

Interests and Abilities: Woodworking

Students were asked to select technology education courses that they have been encouraged to take by guidance counselors based on their interests and abilities. Woodworking was one of the eight classes that students could select. Most of the male respondents (81.5%) and an overwhelming percentage of female respondents (93.5%) demonstrated that they had not been encouraged to take the woodworking class by guidance counselors. Table 40 describes the collected data that addresses this question.

A Chi-square analysis revealed that more male respondents (18.5%) than female respondents (6.5%) indicated that they were encouraged to take woodworking ($p = .01$). The lowest level of being encouraged to take the class (7.7%) came from the sophomore class. The highest percentage of being encouraged to take woodworking (18.3%) was produced by the seniors ($p = .05$). All of the classes demonstrated that either most or an overwhelming percentage of the students had not been encouraged to take the woodworking course by guidance counselors based on their interests and abilities.

The students who were encouraged the least among all grade levels (2.3%) to enroll in the course were senior females. Female respondents were encouraged to take woodworking less than male respondents at every grade level ($p = .01$). Male respondents who were encouraged the most to enroll in the woodworking course included freshmen and juniors.

Table 40

Interests and Abilities: Woodworking

	Checked	Not Checked	Not Interested	n
Male	33 (18.5%)	57 (32.0%)	88 (49.4%)	178
Female	12 (6.5%)	62 (33.7%)	110 (59.8%)	184
Freshman	14 (15.7%)	26 (29.2%)	49 (55.1%)	89
Male	10 (24.4%)	7 (17.1%)	24 (58.5%)	41
Female	4 (8.3%)	19 (39.6%)	25 (52.1%)	48
Sophomore	7 (7.7%)	30 (33.0%)	54 (59.3%)	91
Male	5 (11.9%)	14 (33.3%)	23 (54.8%)	42
Female	2 (4.1%)	16 (32.7%)	31 (63.3%)	49
Junior	15 (18.3%)	18 (22.0%)	49 (59.8%)	82
Male	10 (26.3%)	10 (26.3%)	18 (47.4%)	38
Female	5 (11.4%)	8 (18.2%)	31 (70.5%)	44
Senior	9 (9.0%)	45 (45.0%)	46 (46.0%)	100
Male	8 (14.0%)	26 (45.6%)	23 (40.4%)	57
Female	1 (2.3%)	19 (44.2%)	23 (53.5%)	43

Note. Gender: $X^2 (2, N = 362) = 12.358$, $p = .01$; Grade Level: $X^2 (6, N = 362) = 15.576$, $p = .05$
Gender & Grade Level: $X^2 (14, N = 362) = 34.711$, $p = .01$

Interests and Abilities: Architectural Design

Students were asked to select technology education courses that they have been encouraged to take by guidance counselors based on their interests and abilities. Architectural design was one of the eight classes that students could select. Most of the male respondents (80.3%) and female respondents (85.3%) demonstrated that they had not been encouraged to take the architectural design class by guidance counselors. Table 41 describes the collected data that addresses this question.

A Chi-square analysis revealed that some of the male respondents (19.7%) and female respondents (14.7%) indicated that they were encouraged to take architectural design ($p = .135$). The lowest level of being encouraged to take the class (10.1%) came from the freshman class. The highest percentage of being encouraged to take woodworking (21.0%) was produced by the seniors ($p = .111$). All of the classes demonstrated that most of the students had not been encouraged to take the architectural design course by guidance counselors based on their interests and abilities.

The students who were encouraged the least among all grade levels (9.8%) to enroll in the course were freshman males. Female respondents were encouraged to take architectural design less than male respondents at every grade level with the exception of freshman ($p = .188$). Male respondents who were encouraged the most (26.3%) to enroll in the course were juniors. Female respondents indicated similar encouragement when compared to male respondents at all grade levels with the exception of juniors.

Table 41

Interests and Abilities: Architectural Design

	Checked	Not Checked	Not Interested	n
Male	35 (19.7%)	55 (30.9%)	88 (49.4%)	178
Female	27 (14.7%)	47 (25.5%)	110 (59.8%)	184
Freshman	9 (10.1%)	31 (34.8%)	49 (55.1%)	89
Male	4 (9.8%)	13 (31.7%)	24 (58.5%)	41
Female	5 (10.4%)	18 (37.5%)	25 (52.1%)	48
Sophomore	17 (18.7%)	20 (22.0%)	54 (59.3%)	91
Male	8 (19.0%)	11 (26.2%)	23 (54.8%)	42
Female	9 (18.4%)	9 (18.4%)	31 (63.3%)	49
Junior	15 (18.3%)	18 (22.0%)	49 (59.8%)	82
Male	10 (26.3%)	10 (26.3%)	18 (47.4%)	38
Female	5 (11.4%)	8 (18.2%)	31 (70.5%)	44
Senior	21 (21.0%)	33 (33.0%)	46 (46.0%)	100
Male	13 (22.8%)	21 (36.8%)	23 (40.4%)	57
Female	8 (18.6%)	12 (27.9%)	23 (53.5%)	43

Note. Gender: X^2 (2, N = 362) = 4.006, p = .135; Grade Level: X^2 (6, N = 362) = 10.347, p = .111
Gender & Grade Level: X^2 (14, N = 362) = 18.428, p = .188

Further Education: Engineering Drafting

Respondents were asked to select technology education courses that they have been encouraged to take by guidance counselors due to the fact that they will prepare students for further education. Engineering drafting was one of the eight classes that students could select. Most of the male respondents (82.0%) and an overwhelming percentage of female respondents (94.0%) demonstrated that they had not been informed that the engineering drafting class would prepare them for further education. Table 42 describes the collected data that addresses this question.

A Chi-square analysis revealed that more male respondents (18.0%) than female respondents (6.0%) indicated that they were encouraged to take engineering drafting ($p =.01$). The lowest level of being encouraged to take the class (6.6%) came from the sophomore class. The highest percentage of being encouraged to take the class (18.3%) was produced by the juniors ($p =.05$). All of the grade levels demonstrated that most of the respondents had not been encouraged to take the engineering drafting course by guidance counselors.

The students who were encouraged the least among all grade levels (4.1%) to enroll in the course were sophomore females. Female respondents were encouraged to take architectural design less than male respondents at every grade level with the exception of freshman ($p =.001$). Male respondents who were encouraged the most to enroll in the course were juniors and seniors.

Table 42

Further Education: Engineering Drafting

	Checked	Not Checked	Not Interested	n
Male	32 (18.0%)	39 (21.9%)	107 (60.1%)	178
Female	11 (6.0%)	25 (24.6%)	127 (69.4%)	183
Freshman	7 (8.0%)	30 (34.1%)	51 (58.0%)	88
Male	3 (7.3%)	9 (22.0%)	29 (70.7%)	41
Female	4 (8.5%)	21 (44.7%)	22 (46.8%)	47
Sophomore	6 (6.6%)	18 (19.8%)	67 (73.6%)	91
Male	4 (9.5%)	10 (23.8%)	28 (66.7%)	42
Female	2 (4.1%)	8 (16.3%)	39 (79.6%)	49
Junior	15 (18.3%)	14 (17.1%)	53 (64.6%)	82
Male	12 (31.6%)	8 (21.1%)	18 (47.4%)	38
Female	3 (6.8%)	6 (13.6%)	35 (79.5%)	44
Senior	15 (15.0%)	22 (22.0%)	63 (63.0%)	100
Male	13 (22.8%)	12 (21.1%)	32 (56.1%)	57
Female	2 (4.7%)	10 (23.3%)	23 (53.5%)	43

Note. Gender: X^2 (2, N = 361) = 12.327, p = .01; Grade Level: X^2 (6, N = 361) = 15.029, p = .05
Gender & Grade Level: X^2 (14, N = 361) = 45.570, p = .001

Further Education: Technology Lab

Respondents were asked to select technology education courses that they have been encouraged to take by guidance counselors due to the fact that they will prepare students for further education. Technology lab was one of the eight classes that students could select. Most of the male respondents (83.1%) and an overwhelming percentage of female respondents (91.8%) demonstrated that they had not been informed that the technology lab class would prepare them for further education. Table 43 describes the collected data that addresses this question.

A Chi-square analysis revealed that more male respondents (16.9%) than female respondents (8.2%) indicated that they were encouraged to take technology lab ($p = .05$). The lowest level of being encouraged to take the class (7.7%) came from the sophomore class. The highest percentage of being encouraged to take the class (14.8%) was produced by the freshmen ($p = .443$). All of the grade levels demonstrated that most of the respondents had not been encouraged to take the technology lab course by guidance counselors.

The students who were encouraged the least among all grade levels (2.0%) to enroll in the course were sophomore females. Female respondents were encouraged to take technology lab less than male respondents at every grade level with the exception of freshman ($p = .01$). Male respondents who were encouraged the most (23.7%) to enroll in the course were juniors. Surprisingly, freshman females received more encouragement to enroll in the technology lab course when compared to freshman males.

Table 43

Further Education: Technology Lab

	Checked	Not Checked	Not Interested	n
Male	30 (16.9%)	41 (23.0%)	107 (60.1%)	178
Female	15 (8.2%)	41 (22.4%)	127 (69.4%)	183
Freshman	13 (14.8%)	24 (27.3%)	51 (58.0%)	88
Male	3 (7.3%)	9 (22.0%)	29 (70.7%)	41
Female	10 (21.3%)	15 (31.9%)	22 (46.8%)	47
Sophomore	7 (7.7%)	17 (18.7%)	67 (73.6%)	91
Male	6 (14.3%)	8 (19.0%)	28 (66.7%)	42
Female	1 (2.0%)	9 (18.4%)	39 (79.6%)	49
Junior	12 (14.6%)	17 (20.7%)	53 (64.6%)	82
Male	9 (23.7%)	11 (28.9%)	18 (47.4%)	38
Female	3 (6.8%)	6 (13.6%)	35 (79.5%)	44
Senior	13 (13.0%)	24 (24.0%)	63 (63.0%)	100
Male	12 (21.1%)	13 (22.8%)	32 (56.1%)	57
Female	1 (2.3%)	11 (25.6%)	31 (72.1%)	43

Note. Gender: X^2 (2, N = 361) = 6.641, p = .05; Grade Level: X^2 (6, N = 361) = 5.823, p = .443
Gender & Grade Level: X^2 (14, N = 361) = 33.400, p = .01

Further Education: Photography

Respondents were asked to select technology education courses that they have been encouraged to take by guidance counselors due to the fact that they will prepare students for further education. Photography was one of the eight classes that students could select. An overwhelming percentage of the male respondents (91.0%) and most female respondents (86.3%) demonstrated that they had not been informed that the photography class would prepare them for further education. Table 44 describes the collected data that addresses this question.

A Chi-square analysis revealed that more female respondents (13.7%) than male respondents (9.0%) indicated that they were encouraged to take photography ($p = .01$). The lowest level of being encouraged to take the class (7.7%) came from the sophomore class. The highest percentage of being encouraged to take the class (15.9%) was produced by the juniors ($p = .248$). All of the grade levels demonstrated that most of the respondents had not been encouraged to take the photography course by guidance counselors.

The students who were encouraged the least among all grade levels (2.4%) to enroll in the course were freshman males. Female respondents were encouraged to take technology lab more than male respondents at every grade level with the exception of juniors ($p = .01$). Male respondents who were encouraged the most (18.4%) to enroll in the course were juniors. The freshman and junior class received the most encouragement to enroll in the photography course. Freshman females received the most encouragement (21.3%) to enroll in the course among all students.

Table 44

Further Education: Photography

	Checked	Not Checked	Not Interested	n
Male	16 (9.0%)	55 (30.9%)	107 (60.1%)	178
Female	25 (13.7%)	31 (16.9%)	127 (69.4%)	183
Freshman	11 (12.5%)	26 (29.5%)	51 (58.0%)	88
Male	1 (2.4%)	11 (26.8%)	29 (70.7%)	41
Female	10 (21.3%)	15 (31.9%)	22 (46.8%)	47
Sophomore	7 (7.7%)	17 (18.7%)	67 (73.6%)	91
Male	3 (7.3%)	11 (26.2%)	28 (66.7%)	42
Female	4 (8.2%)	6 (12.2%)	39 (79.6%)	49
Junior	13 (15.9%)	16 (19.5%)	53 (64.6%)	82
Male	7 (18.4%)	13 (34.2%)	18 (47.4%)	38
Female	6 (13.6%)	3 (6.8%)	35 (79.5%)	44
Senior	10 (10.0%)	27 (27.0%)	63 (63.0%)	100
Male	5 (8.8%)	20 (35.1%)	32 (56.1%)	57
Female	5 (11.6%)	7 (16.3%)	31 (72.1%)	43

Note. Gender: X^2 (2, N = 361) = 10.315, p = .01; Grade Level: X^2 (6, N = 361) = 7.862, p = .248
Gender & Grade Level: X^2 (14, N = 361) = 34.193, p = .01

Further Education: Metalworking

Respondents were asked to select technology education courses that they have been encouraged to take by guidance counselors due to the fact that they will prepare students for further education. Metalworking was one of the eight classes that students could select. Most of the male respondents (87.1%) and an overwhelming percentage of female respondents (97.3%) demonstrated that they had not been informed that the metalworking class would prepare them for further education. Table 45 describes the collected data that addresses this question.

A Chi-square analysis revealed that more male respondents (12.9%) than female respondents (2.7%) indicated that they were encouraged to take metalworking ($p = .001$). The lowest level of being encouraged to take the class (3.4%) came from the freshman class. The highest percentage of being encouraged to take the class (15.9%) was produced by the juniors ($p = .01$). All of the grade levels demonstrated that most of the respondents had not been encouraged to take the metalworking course by guidance counselors.

The students who were encouraged the least among all grade levels (0.0%) to enroll in the course were freshman and senior females. Female respondents were encouraged to take metalworking less than male respondents at every grade level. Male juniors and seniors were encouraged the most to enroll in the course. Results according to gender by each grade level were inconclusive due to the extremely low number of respondents who were encouraged to enroll in the metalworking course by guidance counselors.

Table 45

Further Education: Metalworking

	Checked	Not Checked	Not Interested	n
Male	23 (12.9%)	48 (27.0%)	107 (60.1%)	178
Female	5 (2.7%)	51 (27.9%)	127 (69.4%)	183
Freshman	3 (3.4%)	34 (38.6%)	51 (58.0%)	88
Male	3 (7.3%)	9 (22.0%)	29 (70.7%)	41
Female	0 (0.0%)	25 (53.2%)	22 (46.8%)	47
Sophomore	4 (4.4%)	20 (22.0%)	67 (73.6%)	91
Male	3 (7.1%)	11 (26.2%)	28 (66.7%)	42
Female	1 (2.0%)	9 (18.4%)	39 (79.6%)	49
Junior	13 (15.9%)	16 (19.5%)	53 (64.6%)	82
Male	9 (23.7%)	11 (28.9%)	18 (47.4%)	38
Female	4 (9.1%)	5 (11.4%)	35 (79.5%)	44
Senior	8 (8.0%)	29 (29.0%)	63 (63.0%)	100
Male	8 (14.0%)	17 (29.8%)	32 (56.1%)	57
Female	0 (0.0%)	12 (27.9%)	31 (72.1%)	43

Note. Gender: X^2 (2, N = 361) = 13.305, p = .001; Grade Level: X^2 (6, N = 361) = 19.169, p = .01

Further Education: Television and Video Production

Respondents were asked to select technology education courses that they have been encouraged to take by guidance counselors due to the fact that they will prepare students for further education. Television and video production was one of the eight classes that students could select. An overwhelming percentage of the male respondents (91.0%) and most of the female respondents (89.6%) demonstrated that they had not been informed that the television and video production class would prepare them for further education. Table 46 describes the collected data that addresses this question.

A Chi-square analysis revealed that a few of the male respondents (9.0%) and some female respondents (10.4%) indicated that they were encouraged to take the class ($p = .067$). The lowest level of being encouraged to take the class (4.4%) came from the sophomore class. The highest percentage of being encouraged to take the class (13.4%) was produced by the juniors ($p = .260$). All of the grade levels demonstrated that most of the respondents had not been encouraged to take the television and video production course by guidance counselors.

The students who were encouraged the least among all grade levels (2.4%) to enroll in the course were sophomore males. Freshman and sophomore female respondents were encouraged to take the course more than freshman and sophomore male respondents. Junior and senior male respondents were encouraged more than junior and senior female respondents. Results according to gender by each grade level were inconclusive due to the extremely low number of respondents who were encouraged to enroll in the television and video production course by guidance counselors.

Table 46

Further Education: Television and Video Production

	Checked	Not Checked	Not Interested	n
Male	16 (9.0%)	55 (30.9%)	107 (60.1%)	178
Female	19 (10.4%)	37 (20.2%)	127 (69.4%)	183
Freshman	10 (11.4%)	27 (30.7%)	51 (58.0%)	88
Male	3 (7.3%)	9 (22.0%)	29 (70.7%)	41
Female	7 (14.9%)	18 (38.3%)	22 (46.8%)	47
Sophomore	4 (4.4%)	20 (22.0%)	67 (73.6%)	91
Male	1 (2.4%)	13 (31.0%)	28 (66.7%)	42
Female	3 (6.1%)	7 (14.3%)	39 (79.6%)	49
Junior	11 (13.4%)	18 (22.0%)	53 (64.6%)	82
Male	6 (15.8%)	14 (36.8%)	18 (47.4%)	38
Female	5 (11.4%)	4 (9.1%)	35 (79.5%)	44
Senior	10 (10.0%)	27 (27.0%)	63 (63.0%)	100
Male	6 (10.5%)	19 (33.3%)	32 (56.1%)	57
Female	4 (9.3%)	8 (18.6%)	31 (72.1%)	43

Note. Gender: $X^2(2, N = 361) = 5.420$, $p = .067$; Grade Level: $X^2(6, N = 361) = 7.712$, $p = .260$

Further Education: Small Engines

Respondents were asked to select technology education courses that they have been encouraged to take by guidance counselors due to the fact that they will prepare students for further education. Small Engines was one of the eight classes that students could select. Most of the male respondents (84.8%) and an overwhelming percentage of female respondents (94.0%) demonstrated that they had not been informed that the small engines class would prepare them for further education. Table 47 describes the collected data that addresses this question.

A Chi-square analysis revealed that more male respondents (15.2%) than female respondents (6.0%) indicated that they were encouraged to take small engines ($p = .05$). The lowest level of being encouraged to take the class (3.3%) came from the sophomore class. The highest percentage of being encouraged to take the class (15.9%) was produced by the juniors ($p = .05$). All of the grade levels demonstrated that most of the respondents had not been encouraged to take the small engines course by guidance counselors.

The students who were encouraged the least among all grade levels (2.4%) to enroll in the course were sophomore males. Female respondents were encouraged to take small engines less than male respondents at every grade level with the exception of sophomores. Male juniors and seniors were encouraged the most to enroll in the course. Results according to gender by each grade level were inconclusive due to the extremely low number of respondents who were encouraged to enroll in the small engines course by guidance counselors.

Table 47

Further Education: Small Engines

	Checked	Not Checked	Not Interested	n
Male	27 (15.2%)	44 (24.7%)	107 (60.1%)	178
Female	11 (6.0%)	45 (24.6%)	127 (69.4%)	183
Freshman	8 (9.1%)	29 (33.0%)	51 (58.0%)	88
Male	6 (14.6%)	6 (14.6%)	29 (70.7%)	41
Female	2 (4.3%)	23 (48.9%)	22 (46.8%)	47
Sophomore	3 (3.3%)	21 (23.1%)	67 (73.6%)	91
Male	1 (2.4%)	13 (31.0%)	28 (66.7%)	42
Female	2 (4.1%)	8 (16.3%)	39 (79.6%)	49
Junior	13 (15.9%)	16 (19.5%)	53 (64.6%)	82
Male	9 (23.7%)	11 (28.9%)	18 (47.4%)	38
Female	4 (9.1%)	5 (11.4%)	35 (79.5%)	44
Senior	14 (14.0%)	23 (23.0%)	63 (63.0%)	100
Male	11 (19.3%)	14 (24.6%)	32 (56.1%)	57
Female	3 (7.0%)	9 (20.9%)	31 (72.1%)	43

Note. Gender: X^2 (2, N = 361) = 8.390, p = .05; Grade Level: X^2 (6, N = 361) = 13.370, p = .05

Further Education: Woodworking

Respondents were asked to select technology education courses that they have been encouraged to take by guidance counselors due to the fact that they will prepare students for further education. Woodworking was one of the eight classes that students could select. Most of the male respondents (86.0%) and an overwhelming percentage of female respondents (96.2%) demonstrated that they had not been informed that the woodworking class would prepare them for further education. Table 48 describes the collected data that addresses this question.

A Chi-square analysis revealed that more male respondents (14.0%) than female respondents (3.8%) indicated that they were encouraged to take woodworking ($p = .01$). The lowest level of being encouraged to take the class (3.3%) came from the sophomore class. The highest percentage of being encouraged to take the class (15.9%) was produced by the juniors ($p = .05$). All of the grade levels demonstrated that most of the respondents had not been encouraged to take the woodworking course by guidance counselors.

The students who were encouraged the least among all grade levels (2.0%) to enroll in the course were sophomore females. Female respondents were encouraged to take woodworking less than male respondents at every grade level. Junior males were encouraged the most (23.7%) to enroll in the course. Results according to gender by each grade level were inconclusive due to the extremely low number of respondents who were encouraged to enroll in the woodworking course by guidance counselors.

Table 48

Further Education: Woodworking

	Checked	Not Checked	Not Interested	n
Male	25 (14.0%)	46 (25.8%)	107 (60.1%)	178
Female	7 (3.8%)	49 (26.8%)	127 (69.4%)	183
Freshman	7 (8.0%)	30 (34.1%)	51 (58.0%)	88
Male	6 (14.6%)	6 (14.6%)	29 (70.7%)	41
Female	1 (2.1%)	24 (51.1%)	22 (46.8%)	47
Sophomore	3 (3.3%)	21 (23.1%)	67 (73.6%)	91
Male	2 (4.8%)	12 (28.6%)	28 (66.7%)	42
Female	1 (2.0%)	9 (18.4%)	39 (79.6%)	49
Junior	13 (15.9%)	16 (19.5%)	53 (64.6%)	82
Male	9 (23.7%)	11 (28.9%)	18 (47.4%)	38
Female	4 (9.1%)	5 (11.4%)	35 (79.5%)	44
Senior	9 (9.0%)	28 (28.0%)	63 (63.0%)	100
Male	8 (14.0%)	17 (29.8%)	32 (56.1%)	57
Female	1 (2.3%)	11 (25.6%)	31 (72.1%)	43

Note. Gender: $X^2(2, N = 361) = 11.862$, $p = .01$; Grade Level: $X^2(6, N = 361) = 13.500$, $p = .05$

Further Education: Architectural Design

Respondents were asked to select technology education courses that they have been encouraged to take by guidance counselors due to the fact that they will prepare students for further education. Architectural design was one of the eight classes that students could select. Most of the male respondents (80.3%) and female respondents (88.0%) demonstrated that they had not been informed that the architectural design class would prepare them for further education. Table 49 describes the collected data that addresses this question.

A Chi-square analysis revealed that some of the male respondents (19.7%) and female respondents (12.0%) indicated that they were encouraged to take architectural design ($p = .097$). The lowest level of being encouraged to take the class (13.0%) came from the senior class. The highest percentage of being encouraged to take the class (19.5%) was produced by the juniors ($p = .05$). All of the grade levels demonstrated that most of the respondents had not been encouraged to take the architectural design course by guidance counselors.

The students who were encouraged the least among all grade levels (6.8%) to enroll in the course were junior females. Female respondents were encouraged to take architectural design less than male respondents at every grade level with the exception of freshman ($p = .001$). Junior males were encouraged the most (34.2%) to enroll in the course. Freshman and sophomore respondents received similar encouragement to enroll in the course, while junior and senior males received more encouragement when compared to junior and senior female respondents.

Table 49

Further Education: Architectural Design

	Checked	Not Checked	Not Interested	n
Male	35 (19.7%)	36 (20.2%)	107 (60.1%)	178
Female	22 (12.0%)	34 (18.6%)	127 (69.4%)	183
Freshman	12 (13.6%)	25 (28.4%)	51 (58.0%)	88
Male	5 (12.2%)	7 (17.1%)	29 (70.7%)	41
Female	7 (14.9%)	18 (38.3%)	22 (46.8%)	47
Sophomore	16 (17.6%)	8 (8.8%)	67 (73.6%)	91
Male	8 (19.0%)	6 (14.3%)	28 (66.7%)	42
Female	8 (16.3%)	2 (4.1%)	39 (79.6%)	49
Junior	16 (19.5%)	13 (15.9%)	53 (64.6%)	82
Male	13 (34.2%)	7 (18.4%)	18 (47.4%)	38
Female	3 (16.8%)	6 (13.6%)	35 (79.5%)	44
Senior	13 (13.0%)	24 (24.0%)	63 (63.0%)	100
Male	9 (15.8%)	16 (28.1%)	32 (56.1%)	57
Female	4 (9.3%)	8 (18.6%)	31 (72.1%)	43

Note. Gender: X^2 (2, N = 361) = 4.663, p = .097; Grade Level: X^2 (6, N = 361) = 14.025, p = .05
Gender & Grade Level: X^2 (14, N = 361) = 38.985, p = .001

The Only Boy or Girl: Engineering Drafting

Respondents were asked to select technology education courses where they would be the only male or female student in the class. Engineering drafting was one of the eight classes that students could select. Most of the male respondents (86.5%) and approximately two thirds of female respondents (63.6%) demonstrated that they did not think that they would be the only male or female student in the class. Table 50 describes the collected data that addresses this question.

A Chi-square analysis revealed that more female respondents (36.4%) than male respondents (13.5%) indicated that they thought they might be the only male or female student in the engineering drafting course ($p = .001$). The lowest level of respondents thinking that they may be the only male or female in the course (12.4%) came from the freshman class. The highest percentage (30.8%) was produced by the sophomores ($p = .087$). All grade levels with the exception of freshman demonstrated that approximately 70% of respondents did not think that they would be the only male or female student in the class.

The smallest percentage of students who thought that they would be the only male or female in the engineering drafting course (2.4%) were freshman males. Female respondents had a stronger belief that they would be the only female student in the engineering drafting class at all grade levels ($p = .001$) when compared to male respondents. Junior females indicated with the greatest frequency (45.5%) that they thought they would be the only member of their gender in the class. Sophomore and senior males reported higher percentages of believing they would be the only member of their gender in the engineering drafting course compared to freshman and junior males.

Table 50

The Only Boy or Girl: Engineering Drafting

	Checked	Not Checked	Not Interested	n
Male	24 (13.5%)	85 (47.8%)	69 (38.8%)	178
Female	67 (36.4%)	74 (40.2%)	43 (23.4%)	184
Freshman	11 (12.4%)	44 (49.4%)	34 (38.8%)	89
Male	1 (2.4%)	23 (56.1%)	17 (41.5%)	41
Female	10 (20.8%)	21 (43.8%)	17 (35.4%)	48
Sophomore	28 (30.8%)	36 (39.6%)	27 (29.7%)	91
Male	8 (19.0%)	22 (52.4%)	12 (28.6%)	42
Female	20 (40.8%)	14 (28.6%)	15 (30.6%)	49
Junior	23 (28.0%)	37 (45.1%)	22 (26.8%)	82
Male	3 (7.9%)	16 (42.1%)	19 (50.0%)	38
Female	20 (45.5%)	21 (47.7%)	3 (6.8%)	44
Senior	29 (29.0%)	42 (42.0%)	29 (29.0%)	100
Male	12 (21.1%)	24 (42.1%)	21 (36.8%)	57
Female	17 (39.5%)	18 (41.9%)	8 (18.6%)	43

Note. Gender: X^2 (2, N = 362) = 27.023, p = .001; Grade Level: X^2 (6, N = 362) = 11.055, p = .087
Gender & Grade Level: X^2 (14, N = 362) = 52.117, p = .001

The Only Boy or Girl: Technology Lab

Respondents were asked to select technology education courses where they would be the only male or female student in the class. Technology lab was one of the eight classes that students could select. An overwhelming number of the male respondents (92.1%) and three quarters of female respondents (75.0%) demonstrated that they did not think that they would be the only male or female student in the class. Table 51 describes the collected data that addresses this question.

A Chi-square analysis revealed that more female respondents (25.0%) than male respondents (7.9%) indicated that they thought they might be the only male or female student in the technology lab course ($p = .001$). The lowest level of respondents thinking that they may be the only male or female in the course (5.6%) came from the freshman class. The highest percentage (28.0%) was produced by the juniors ($p = .05$). Juniors and seniors demonstrated greater anticipation of being the only male or female student in the class when compared to freshmen and sophomores.

The smallest percentage of students who thought that they would be the only male or female in the technology lab course (0.0%) were freshman males. Female respondents had a stronger belief that they would be the only female student in the technology lab class at all grade levels ($p = .001$) when compared to male respondents. Junior females indicated with the greatest frequency (45.5%) that they thought they would be the only member of their gender in the class. Females reported increasing percentages of believing they would be the only member of their gender in the course until the senior grade level.

Table 51

The Only Boy or Girl: Technology Lab

	Checked	Not Checked	Not Interested	n
Male	14 (7.9%)	95 (53.4%)	69 (38.8%)	178
Female	46 (25.0%)	95 (51.6%)	43 (23.4%)	184
Freshman	5 (5.6%)	50 (56.2%)	34 (38.8%)	89
Male	0 (0.0%)	24 (58.5%)	17 (41.5%)	41
Female	5 (10.4%)	26 (54.2%)	17 (35.4%)	48
Sophomore	16 (17.6%)	48 (52.7%)	27 (29.7%)	91
Male	5 (11.9%)	25 (59.5%)	12 (28.6%)	42
Female	11 (22.4%)	23 (46.9%)	15 (30.6%)	49
Junior	23 (28.0%)	37 (45.1%)	22 (26.8%)	82
Male	3 (7.9%)	16 (42.1%)	19 (50.0%)	38
Female	20 (45.5%)	21 (47.7%)	3 (6.8%)	44
Senior	16 (16.0%)	55 (55.0%)	29 (29.0%)	100
Male	6 (10.5%)	30 (52.6%)	21 (36.8%)	57
Female	10 (23.3%)	25 (58.1%)	8 (18.6%)	43

Note. Gender: X^2 (2, N = 362) = 23.009, p = .001; Grade Level: X^2 (6, N = 362) = 16.370, p = .05
Gender & Grade Level: X^2 (14, N = 362) = 55.328, p = .001

The Only Boy or Girl: Photography

Respondents were asked to select technology education courses where they would be the only male or female student in the class. Photography was one of the eight classes that students could select. Two thirds of male respondents (66.3%) and an overwhelming number of female respondents (93.5%) demonstrated that they did not think that they would be the only male or female student in the photography class. Table 52 describes the collected data that addresses this question.

A Chi-square analysis revealed that more male respondents (33.7%) than female respondents (6.5%) indicated that they thought they might be the only male or female student in the photography course ($p = .001$). The lowest level of respondents thinking that they may be the only male or female in the course (16.0%) came from the senior class. The highest percentage (26.4%) was produced by the sophomores ($p = .325$). All grade levels demonstrated a similar level of anticipating being the only male or female student in the class.

The smallest percentage of students who thought that they would be the only male or female in the photography course (2.1%) were freshman females. Male respondents had a stronger belief that they would be the only male student in the photography class at all grade levels ($p = .001$) when compared to female respondents. Sophomore males indicated with the greatest frequency (50.0%) that they thought they would be the only member of their gender in the photography class.

Table 52

The Only Boy or Girl: Photography

	Checked	Not Checked	Not Interested	n
Male	60 (33.7%)	49 (27.5%)	69 (38.8%)	178
Female	12 (6.5%)	129 (70.1%)	43 (23.4%)	184
Freshman	15 (16.9%)	40 (44.9%)	34 (38.2%)	89
Male	14 (34.1%)	10 (24.4%)	17 (41.5%)	41
Female	1 (2.1%)	30 (62.5%)	17 (35.4%)	48
Sophomore	24 (26.4%)	40 (44.0%)	27 (29.7%)	91
Male	21 (50.0%)	9 (21.4%)	12 (28.6%)	42
Female	3 (6.1%)	31 (63.3%)	15 (30.6%)	49
Junior	17 (20.7%)	43 (52.4%)	22 (26.8%)	82
Male	13 (34.3%)	6 (15.8%)	19 (50.0%)	38
Female	4 (9.1%)	37 (84.1%)	3 (6.8%)	44
Senior	16 (16.0%)	55 (55.0%)	29 (29.0%)	100
Male	12 (21.1%)	24 (42.1%)	21 (36.8%)	57
Female	4 (9.3%)	31 (72.1%)	8 (18.6%)	43

Note. Gender: X^2 (2, N = 362) = 73.912, p = .001; Grade Level: X^2 (6, N = 362) = 6.956, p = .325
Gender & Grade Level: X^2 (14, N = 362) = 102.071, p = .001

The Only Boy or Girl: Metalworking

Respondents were asked to select technology education courses where they would be the only male or female student in the class. Metalworking was one of the eight classes that students could select. Most of the male respondents (83.1%) and a minority of female respondents (42.4%) demonstrated that they did not think that they would be the only male or female student in the class. Table 53 describes the collected data that addresses this question.

A Chi-square analysis revealed that more female respondents (57.6%) than male respondents (16.9%) indicated that they thought they might be the only male or female student in the metalworking course ($p = .001$). The lowest level of respondents thinking that they may be the only male or female in the course (30.3%) came from the freshman class. The highest percentage (42.0%) was produced by the seniors ($p = .588$). As grade level increased, so did the belief that students would be the only representative of their gender in the metalworking class.

The smallest percentage of students who thought that they would be the only male or female in the metalworking course (11.9%) were sophomore males. Female respondents had a stronger belief that they would be the only female student in the metalworking class at all grade levels ($p = .001$) when compared to male respondents. Junior females indicated with the greatest frequency (65.9%) that they thought they would be the only member of their gender in the class. Senior males surprisingly reported the highest male percentage of believing they would be the only member of their gender in the metalworking course.

Table 53

The Only Boy or Girl: Metalworking

	Checked	Not Checked	Not Interested	n
Male	30 (16.9%)	79 (44.4%)	69 (38.8%)	178
Female	106 (57.6%)	35 (19.0%)	43 (23.4%)	184
Freshman	27 (30.3%)	28 (31.5%)	34 (38.2%)	89
Male	5 (12.2%)	19 (46.3%)	17 (41.5%)	41
Female	22 (45.8%)	9 (18.8%)	17 (35.4%)	48
Sophomore	33 (36.3%)	31 (34.1%)	27 (29.7%)	91
Male	5 (11.9%)	25 (59.5%)	12 (28.6%)	42
Female	28 (57.1%)	6 (12.2%)	15 (30.6%)	49
Junior	34 (41.5%)	26 (31.7%)	22 (26.8%)	82
Male	5 (13.2%)	14 (36.8%)	19 (50.0%)	38
Female	29 (65.9%)	12 (27.3%)	3 (6.8%)	44
Senior	42 (42.0%)	29 (29.0%)	29 (29.0%)	100
Male	15 (26.3%)	21 (36.8%)	21 (36.8%)	57
Female	27 (62.8%)	8 (18.6%)	8 (18.6%)	43

Note. Gender: X^2 (2, N = 362) = 65.407, p = .001; Grade Level: X^2 (6, N = 362) = 4.658, p = .588
Gender & Grade Level: X^2 (14, N = 362) = 87.215, p = .001

The Only Boy or Girl: Television and Video Production

Respondents were asked to select technology education courses where they would be the only male or female student in the class. Television and video production was one of the eight classes that students could select. Most of the male respondents (86.0%) and an overwhelming number of female respondents (95.1%) demonstrated that they did not think that they would be the only male or female student in the class. Table 54 describes the collected data that addresses this question.

A Chi-square analysis revealed that more male respondents (14.0%) than female respondents (4.9%) indicated that they thought they might be the only male or female student in the television and video production course ($p = .001$). The lowest level of respondents thinking that they may be the only male or female in the course (6.7%) came from the freshman class. The highest percentage (12.1%) was produced by the sophomores ($p = .633$). All grade levels demonstrated a similar level of anticipating being the only male or female student in the class.

The smallest percentage of students who thought that they would be the only male or female in the course (0.0%) were freshman females. Male respondents had a stronger belief that they would be the only male student in the television and video production class at all grade levels with the exception of juniors. Sophomore males indicated with the greatest frequency (19.0%) that they thought they would be the only member of their gender in the class. Results according to gender by each grade level were inconclusive due to the extremely low number of respondents who represented various categories concerning the television and video production course.

Table 54

The Only Boy or Girl: Television and Video Production

	Checked	Not Checked	Not Interested	n
Male	25 (14.0%)	84 (47.2%)	69 (38.8%)	178
Female	9 (4.9%)	132 (71.7%)	43 (23.4%)	184
Freshman	6 (6.7%)	49 (55.1%)	34 (38.2%)	89
Male	6 (14.6%)	18 (43.9%)	17 (41.5%)	41
Female	0 (0.0%)	31 (64.6%)	17 (35.4%)	48
Sophomore	11 (12.1%)	53 (58.2%)	27 (29.7%)	91
Male	8 (19.0%)	22 (52.4%)	12 (28.6%)	42
Female	3 (6.1%)	31 (63.3%)	15 (30.6%)	49
Junior	7 (8.5%)	53 (64.6%)	22 (26.8%)	82
Male	2 (5.3%)	17 (44.7%)	19 (50.0%)	38
Female	5 (11.4%)	36 (81.8%)	3 (6.8%)	44
Senior	10 (10.0%)	61 (61.0%)	29 (29.0%)	100
Male	9 (15.8%)	27 (47.4%)	21 (36.8%)	57
Female	1 (2.3%)	34 (79.1%)	8 (18.6%)	43

Note. Gender: X^2 (2, N = 362) = 24.139, p = .001; Grade Level: X^2 (6, N = 362) = 4.324, p = .633

The Only Boy or Girl: Small Engines

Respondents were asked to select technology education courses where they would be the only male or female student in the class. The small engines course was one of the eight classes that students could select. Most of the male respondents (84.8%) and approximately one third of female respondents (37.5%) demonstrated that they did not think that they would be the only male or female student in the class. Table 55 describes the collected data that addresses this question.

A Chi-square analysis revealed that more female respondents (62.5%) than male respondents (15.2%) indicated that they thought they might be the only male or female student in the small engines course ($p = .001$). The lowest level of respondents thinking that they may be the only male or female in the course (27.0%) came from the freshman class. The highest percentage (46.3%) was produced by the seniors ($p = .205$). As grade level increased, so did the belief that students would be the only representative of their gender in the class with the exception of seniors.

The smallest percentage of students who thought that they would be the only male or female in the small engines course (7.3%) were freshman males. Female respondents had a stronger belief that they would be the only female student in the class at all grade levels ($p = .001$) when compared to male respondents. Junior females indicated with the greatest frequency (77.3%) that they thought they would be the only member of their gender in the class. Senior males surprisingly reported the highest male percentage of believing they would be the only member of their gender in the small engines course.

Table 55

The Only Boy or Girl: Small Engines

	Checked	Not Checked	Not Interested	n
Male	27 (15.2%)	82 (46.1%)	69 (38.8%)	178
Female	115 (62.5%)	26 (14.1%)	43 (23.4%)	184
Freshman	24 (27.0%)	31 (34.8%)	34 (38.2%)	89
Male	3 (7.3%)	21 (51.2%)	17 (41.5%)	41
Female	21 (43.8%)	10 (20.8%)	17 (35.4%)	48
Sophomore	36 (39.6%)	28 (30.8%)	27 (29.7%)	91
Male	6 (14.3%)	24 (57.1%)	12 (28.6%)	42
Female	30 (61.2%)	4 (8.2%)	15 (30.6%)	49
Junior	38 (46.3%)	22 (26.8%)	22 (26.8%)	82
Male	4 (10.5%)	15 (39.5%)	19 (50.0%)	38
Female	34 (77.3%)	7 (15.9%)	3 (6.8%)	44
Senior	44 (44.0%)	27 (27.0%)	29 (29.0%)	100
Male	14 (24.65)	22 (38.6%)	21 (36.8%)	57
Female	30 (69.8%)	5 (11.6%)	8 (18.6%)	43

Note. Gender: X^2 (2, N = 362) = 89.533, p = .001; Grade Level: X^2 (6, N = 362) = 8.475, p = .205
Gender & Grade Level: X^2 (14, N = 362) = 114.601, p = .001

The Only Boy or Girl: Woodworking

Respondents were asked to select technology education courses where they would be the only male or female student in the class. Woodworking was one of the eight classes that students could select. Most of the male respondents (83.1%) and half of female respondents (50.0%) demonstrated that they did not think that they would be the only male or female student in the class. Table 56 describes the collected data that addresses this question.

A Chi-square analysis revealed that more female respondents (50.0%) than male respondents (16.9%) indicated that they thought they might be the only male or female student in the woodworking course ($p = .001$). The lowest level of respondents thinking that they may be the only male or female in the course (21.3%) came from the freshman class. The highest percentage (42.7%) was produced by the juniors ($p = .137$). As grade level increased, so did the belief that students would be the only representative of their gender in the woodworking class with the exception of seniors.

The smallest percentage of students who thought that they would be the only male or female in the woodworking course (9.5%) were sophomore males. Female respondents had a stronger belief that they would be the only female student in the woodworking class at all grade levels ($p = .001$) when compared to male respondents. Junior females indicated with the greatest frequency (68.2%) that they thought they would be the only member of their gender in the class. Senior males surprisingly reported the highest male percentage of believing they would be the only member of their gender in the woodworking course.

Table 56

The Only Boy or Girl: Woodworking

	Checked	Not Checked	Not Interested	n .
Male	30 (16.9%)	79 (44.4%)	69 (38.8%)	178
Female	92 (50.0%)	49 (26.65)	43 (23.4%)	184
Freshman	19 (21.3%)	36 (40.4%)	34 (38.2%)	89
Male	7 (17.1%)	17 (41.5%)	17 (41.5%)	41
Female	12 (25.05)	19 (39.6%)	17 (35.4%)	48
Sophomore	31 (34.1%)	33 (36.3%)	27 (29.7%)	91
Male	4 (9.5%)	26 (61.9%)	12 (28.6%)	42
Female	27 (55.1%)	7 (14.3%)	15 (30.6%)	49
Junior	35 (42.7%)	25 (30.5%)	22 (26.8%)	82
Male	5 (13.2%)	14 (36.8%)	19 (50.0%)	38
Female	30 (68.2%)	11 (25.0%)	3 (6.8%)	44
Senior	37 (37.0%)	34 (34.0%)	29 (29.0%)	100
Male	14 (24.6%)	22 (38.6%)	21 (36.8%)	57
Female	23 (53.5%)	12 (27.9%)	8 (18.6%)	43

Note. Gender: X^2 (2, N = 362) = 44.488, p = .001; Grade Level: X^2 (6, N = 362) = 9.729, p = .137
Gender & Grade Level: X^2 (14, N = 362) = 79.826, p = .001

The Only Boy or Girl: Architectural Design

Respondents were asked to select technology education courses where they would be the only male or female student in the class. Architectural design was one of the eight classes that students could select. Most of the male respondents (89.3%) female respondents (87.5%) demonstrated that they did not think that they would be the only male or female student in the class. Table 57 describes the collected data that addresses this question.

A Chi-square analysis revealed that few of the male respondents (10.7%) and some of the female respondents (12.5%) indicated that they thought they might be the only male or female student in the architectural design course (p =.01). The lowest level of respondents thinking that they may be the only male or female in the course (7.9%) came from the freshman class. The highest percentage (15.9%) was produced by the juniors (p =.568). Juniors and seniors demonstrated a slightly higher level of anticipating being the only male or female student in the class when compared to underclassmen.

The smallest percentage of students who thought that they would be the only male or female in the course (4.7%) were senior females. Female respondents had a stronger belief that they would be the only female student in the architectural design class at all grade levels with the exception of seniors (p=.001). Junior females indicated with the greatest frequency (20.5%) that they thought they would be the only member of their gender in the class. The percentage of female respondents who felt that they would be with all male students in the architectural design class increased each year until the senior level where it dropped dramatically.

Table 57

The Only Boy or Girl: Architectural Design

	Checked	Not Checked	Not Interested	n
Male	19 (10.7%)	90 (50.6%)	69 (38.8%)	178
Female	23 (12.5%)	118 (64.1%)	43 (23.4%)	184
Freshman	7 (7.9%)	48 (53.9%)	34 (38.2%)	89
Male	2 (4.9%)	22 (53.7%)	17 (41.5%)	41
Female	5 (10.4%)	26 (54.2%)	17 (35.4%)	48
Sophomore	10 (11.0%)	54 (59.3%)	27 (29.7%)	91
Male	3 (7.1%)	27 (64.3%)	12 (28.6%)	42
Female	7 (14.3%)	27 (55.1%)	15 (30.6%)	49
Junior	13 (15.9%)	47 (57.3%)	22 (26.8%)	82
Male	4 (10.5%)	15 (39.5%)	19 (50.0%)	38
Female	9 (20.5%)	32 (72.7%)	3 (6.8%)	44
Senior	12 (12.0%)	59 (59.0%)	29 (29.0%)	100
Male	10 (17.5%)	26 (45.6%)	21 (36.8%)	57
Female	2 (4.7%)	33 (76.7%)	8 (18.6%)	43

Note. Gender: X^2 (2, N = 362) = 10.089, p = .01; Grade Level: X^2 (6, N = 362) = 4.816, p = .568
Gender & Grade Level: X^2 (14, N = 362) = 35.246, p = .001

Class Appropriate: Engineering Drafting

Respondents were provided with a list of technology education courses and asked to determine whether they thought the course was appropriate for boys, for girls, or for all students. Engineering drafting was one of the eight classes that students were asked to evaluate. Over two thirds of the male respondents (69.6%) and approximately two thirds of female respondents (60.3%) indicated that they thought the engineering drafting course was for all students. Table 58 describes the collected data that addresses this question.

A Chi-square analysis revealed that approximately one third of the male respondents (29.8%) and over one third of the female respondents (38.5%) indicated that they thought the engineering drafting course was for boys ($p = .184$). The lowest level of respondents thinking that the course was for all students (56.1%) came from the senior class. The highest percentage of believing the course was for all students (75.3%) was produced by the sophomores ($p = .089$). All grade levels demonstrated a similar level of believing that the course was for all students.

The smallest percentage of students who thought that engineering drafting was for all students (46.5%) were senior females. Male respondents had a stronger belief that the class was for all students when compared to female respondents at all grade levels ($p = .109$). Very few students felt that the class was for girls. Freshman and sophomore students had closer beliefs concerning the course being for all students when compared to the perceptions between junior and senior students. Engineering drafting was considered a class that is more appropriate for boys than girls.

Table 58

Class Appropriate: Engineering Drafting

	For Boys	For Girls	For all Students	n
Male	51 (29.8%)	1 (.6%)	119 (69.6%)	171
Female	69 (38.5%)	2 (1.1%)	108 (60.3%)	179
Freshman	33 (38.8%)	1 (1.2%)	51 (60.0%)	85
Male	14 (36.8%)	1 (2.6%)	23 (60.5%)	38
Female	19 (40.4%)	0 (0.0%)	28 (59.6%)	47
Sophomore	21 (23.6%)	1 (1.1%)	67 (75.3%)	89
Male	9 (22.0%)	0 (0.0%)	32 (78.0%)	41
Female	12 (25.0%)	1 (2.1%)	35 (72.9%)	48
Junior	23 (29.5%)	1 (1.3%)	54 (69.2%)	78
Male	8 (21.6%)	0 (0.0%)	29 (78.4%)	37
Female	15 (36.6%)	1 (2.4%)	25 (61.0%)	41
Senior	43 (43.9%)	0 (0.0%)	55 (56.1%)	98
Male	20 (36.4%)	0 (0.0%)	35 (63.6%)	55
Female	23 (53.5%)	0 (0.0%)	20 (46.5%)	43

Note. Gender: X^2 (2, N = 350) = 3.385, p = .184; Grade Level: X^2 (6, N = 350) = 10.993, p = .089
Gender & Grade Level: X^2 (14, N = 350) = 20.725, p = .109

Class Appropriate: Technology Lab

Respondents were provided with a list of technology education courses and asked to determine whether they thought the course was appropriate for boys, for girls, or for all students. Technology lab was one of the eight classes that students were asked to evaluate. Over three quarters of the male respondents (78.9%) and female respondents (76.5%) indicated that they thought the engineering drafting course was for all students. Table 59 describes the collected data that addresses this question.

A Chi-square analysis revealed that some of the male respondents (21.1%) and female respondents (21.2%) indicated that they thought the technology lab course was for boys ($p = .143$). The lowest level of respondents thinking that the course was for all students (73.5%) came from the senior class. The highest percentage of believing the course was for all students (85.4%) was produced by the sophomores ($p = .125$). Freshman and sophomores demonstrated a slightly higher level of believing that the course was for all students when compared to juniors and seniors.

The smallest percentage of students who thought that technology lab was for all students (68.3%) were junior females. Male respondents had a stronger belief that the class was for all students when compared to female respondents at the sophomore and junior grade levels. Female respondent percentages were higher at the freshman and senior levels ($p = .123$). Very few students felt that technology lab was for girls. Junior students indicated the largest difference in attitudes concerning who the class was appropriate for among all grade levels.

Table 59

Class Appropriate: Technology Lab

	For Boys	For Girls	For all Students	n
Male	36 (21.1%)	0 (0.0%)	135 (78.9%)	171
Female	38 (21.2%)	4 (2.2%)	137 (76.5%)	179
Freshman	18 (21.2%)	2 (2.4%)	65 (76.5%)	85
Male	9 (23.7%)	0 (0.0%)	29 (76.3%)	38
Female	9 (19.1%)	2 (4.3%)	36 (76.6%)	47
Sophomore	11 (12.4%)	2 (2.2%)	76 (85.4%)	89
Male	5 (12.2%)	0 (0.0%)	36 (87.8%)	41
Female	6 (12.5%)	2 (4.2%)	40 (83.3%)	48
Junior	19 (24.4%)	0 (0.0%)	59 (75.6%)	78
Male	6 (16.2%)	0 (0.0%)	31 (83.8%)	37
Female	13 (31.7%)	0 (0.0%)	28 (68.3%)	41
Senior	26 (26.5%)	0 (0.0%)	72 (73.5%)	98
Male	16 (29.1%)	0 (0.0%)	39 (70.9%)	55
Female	10 (23.3%)	0 (0.0%)	33 (76.7%)	43

Note. Gender: X^2 (2, N = 350) = 3.888, p = .143; Grade Level: X^2 (6, N = 350) = 9.987, p = .125
Gender & Grade Level: X^2 (14, N = 350) = 20.240, p = .123

Class Appropriate: Photography

Respondents were provided with a list of technology education courses and asked to determine whether they thought the course was appropriate for boys, for girls, or for all students. Photography was one of the eight classes that students were asked to evaluate. Over three quarters of the male respondents (77.3%) and an overwhelming number of female respondents (88.3%) indicated that they thought the photography course was for all students. Table 60 describes the collected data that addresses this question.

A Chi-square analysis revealed that more male respondents (20.3%) than female respondents (10.1%) indicated that they thought the photography course was for girls ($p = .022$). The lowest level of respondents thinking that the course was for all students (76.7%) came from the freshman class. The highest percentage of believing the course was for all students (89.7%) was produced by the juniors ($p = .462$). Freshmen and sophomores demonstrated a slightly higher level of believing that the course was for all students when compared to juniors and seniors.

The smallest percentage of students who thought that photography was for all students (71.8%) were freshman males. Female respondents had a stronger belief that the class was for all students when compared to male respondents at all grade levels. Very few students felt that photography was for boys. Results according to gender by each grade level were inconclusive due to the extremely low number of respondents who represented various categories concerning the photography course.

Table 60

Class Appropriate: Photography

	For Boys	For Girls	For all Students	n
Male	4 (2.3%)	35 (20.3%)	133 (77.3%)	172
Female	3 (1.7%)	18 (10.1%)	158 (88.3%)	179
Freshman	3 (3.5%)	17 (19.8%)	66 (76.7%)	86
Male	2 (5.1%)	9 (23.1%)	28 (71.8%)	39
Female	1 (2.1%)	8 (17.0%)	38 (80.9%)	47
Sophomore	1 (1.1%)	13 (14.6%)	75 (84.3%)	89
Male	0 (0.0%)	11 (26.8%)	30 (73.2%)	41
Female	1 (2.1%)	2 (4.2%)	45 (93.8%)	48
Junior	1 (1.3%)	7 (9.0%)	70 (89.7%)	78
Male	0 (0.0%)	6 (16.2%)	31 (83.8%)	37
Female	1 (2.4%)	1 (2.4%)	39 (95.1%)	41
Senior	2 (2.0%)	16 (16.3%)	80 (81.6%)	98
Male	2 (3.6%)	9 (16.4%)	44 (80.0%)	55
Female	0 (0.0%)	7 (16.3%)	36 (83.7%)	43

Note. Gender: X^2 (2, N = 351) = 7.607, p = .022; Grade Level: X^2 (6, N = 351) = 5.664, p = .462

Class Appropriate: Metalworking

Respondents were provided with a list of technology education courses and asked to determine whether they thought the course was appropriate for boys, for girls, or for all students. Metalworking was one of the eight classes that students were asked to evaluate. Less than half of the male respondents (45.9%) and female respondents (42.5%) indicated that they thought the metalworking course was for all students. Table 61 describes the collected data that addresses this question.

A Chi-square analysis revealed that over half of the male respondents (54.1%) and female respondents (57.0%) indicated that they thought the metalworking course was for boys ($p = .513$). The lowest level of respondents thinking that the course was for all students (36.7%) came from the senior class. The highest percentage of believing the course was for all students (58.4%) was produced by the sophomores ($p = .031$). Freshmen and sophomores demonstrated a higher level of believing that the course was for all students when compared to juniors and seniors.

The smallest percentage of respondents who thought that metalworking was for all students (31.9%) were freshman females. Male respondents had a stronger belief that the class was for all students when compared to female respondents at all grade levels with the exception of juniors ($p = .063$). Only 1 of 351 students felt that the class was for girls. Freshman female respondents had the strongest belief (68.1%) that metalworking was for boys. Metalworking was considered a class that is more appropriate for boys than girls.

Table 61

Class Appropriate: Metalworking

	For Boys	For Girls	For all Students	n .
Male	93 (54.1%)	0 (0.0%)	79 (45.9%)	172
Female	102 (57.0%)	1 (0.6%)	76 (42.5%)	179
Freshmen	52 (60.5%)	0 (0.0%)	34 (39.5%)	86
Male	20 (51.3%)	0 (0.0%)	19 (48.7%)	39
Female	32 (68.1%)	0 (0.0%)	15 (31.9%)	47
Sophomore	37 (41.6%)	0 (0.0%)	52 (58.4%)	89
Male	16 (39.0%)	0 (0.0%)	25 (61.0%)	41
Female	21 (43.8%)	0 (0.0%)	27 (56.3%)	48
Junior	44 (56.4%)	1 (1.3%)	33 (42.3%)	78
Male	24 (64.9%)	0 (0.0%)	13 (35.1%)	37
Female	20 (48.8%)	1 (2.4%)	20 (48.8%)	41
Senior	62 (63.3%)	0 (0.0%)	36 (36.7%)	98
Male	33 (60.0%)	0 (0.0%)	22 (40.0%)	55
Female	29 (67.4%)	0 (0.0%)	14 (32.6%)	43

Note. Gender: X^2 (2, N = 351) = 1.334, p = .513; Grade Level: X^2 (6, N = 351) = 13.867, p = .031
Gender & Grade Level: X^2 (14, N = 351) = 22.844, p = .063

Class Appropriate: Television and Video Production

Respondents were provided with a list of technology education courses and asked to determine whether they thought the course was appropriate for boys, for girls, or for all students. Television and video production was one of the eight classes that students were asked to evaluate. An overwhelming percentage of the male respondents (91.3%) and female respondents (92.7%) indicated that they thought the course was for all students. Table 62 describes the collected data that addresses this question.

A Chi-square analysis revealed that very few of the male respondents (5.2%) and female respondents (3.9%) indicated that they thought the television and video production course was for boys ($p = .835$). The lowest level of respondents thinking that the course was for all students (89.8%) came from the senior class. The highest percentage of believing the course was for all students (95.5%) was produced by the sophomores ($p = .279$). All grade levels demonstrated a similar level of believing that the course was for all students.

The smallest percentage of students who thought that television and video production was for all students (87.3%) were senior males. Female respondents had a stronger belief that the class was for all students when compared to male respondents at all grade levels with the exception of juniors ($p = .651$). Very few students felt that television and video production was only for girls or boys.

Table 62

Class Appropriate: Television and Video Production

	For Boys	For Girls	For all Students	n
Male	9 (5.2%)	6 (3.5%)	157 (91.3%)	172
Female	7 (3.9%)	6 (3.4%)	166 (92.7%)	179
Freshman	5 (5.8%)	3 (3.5%)	78 (90.7%)	86
Male	3 (7.7%)	1 (2.6%)	35 (89.7%)	39
Female	2 (4.3%)	2 (4.3%)	43 (91.5%)	47
Sophomore	1 (1.1%)	3 (3.4%)	85 (95.5%)	89
Male	0 (0.0%)	2 (4.9%)	39 (95.1%)	41
Female	1 (2.1%)	1 (2.1%)	46 (95.8%)	48
Junior	2 (2.6%)	4 (5.1%)	72 (92.3%)	78
Male	1 (2.7%)	1 (2.7%)	35 (94.6%)	37
Female	1 (2.4%)	3 (7.3%)	37 (90.2%)	41
Senior	8 (8.2%)	2 (2.0%)	88 (89.8%)	98
Male	5 (9.1%)	2 (3.6%)	48 (87.3%)	55
Female	3 (7.0%)	0 (0.0%)	40 (93.0%)	43

Note. Gender: X^2 (2, N = 351) = .361, p = .835; Grade Level: X^2 (6, N = 351) = 7.475, p = .279
Gender & Grade Level: X^2 (14, N = 351) = 11.441, p = .651

Class Appropriate: Small Engines

Respondents were provided with a list of technology education courses and asked to determine whether they thought the course was appropriate for boys, for girls, or for all students. The small engines course was one of the eight classes that students were asked to evaluate. Less than half of the male respondents (47.7%) and female respondents (43.0%) indicated that they thought the small engines course was for all students. Table 63 describes the collected data that addresses this question.

A Chi-square analysis revealed that over half of the male respondents (51.7%) and female respondents (55.3%) indicated that they thought the small engines course was for boys (p =.461). The lowest level of respondents thinking that the course was for all students (35.7%) came from the senior class. The highest percentage of believing the course was for all students (58.4%) was produced by the sophomores (p =.045). Freshmen and sophomores demonstrated a higher level of believing that the course was for all students when compared to juniors and seniors.

The smallest percentage of respondents who thought that the small engines course was for all students (30.2%) were senior females. Male respondents had a stronger belief that the class was for all students when compared to female respondents at all grade levels with the exception of juniors (p =.035). Only 4 of 351 students felt that the class was for girls. Senior female respondents had the strongest belief (67.4%) that small engines course was for boys.

Table 63

Class Appropriate: Small Engines

	For Boys	For Girls	For all Students	n
Male	89 (51.7%)	1 (0.6%)	82 (47.7%)	172
Female	99 (55.3%)	3 (1.7%)	77 (43.0%)	179
Freshman	50 (58.1%)	1 (1.2%)	35 (40.7%)	86
Male	19 (48.7%)	1 (2.6%)	19 (48.7%)	39
Female	31 (66.0%)	0 (0.0%)	16 (34.0%)	47
Sophomore	37 (41.6%)	0 (0.0%)	52 (58.4%)	89
Male	15 (36.6%)	0 (0.0%)	26 (63.4%)	41
Female	22 (45.8%)	0 (0.0%)	26 (54.2%)	48
Junior	39 (50.0%)	2 (2.6%)	37 (47.4%)	78
Male	22 (59.5%)	0 (0.0%)	15 (40.5%)	37
Female	17 (41.5%)	2 (4.9%)	22 (53.7%)	41
Senior	62 (63.3%)	1 (1.0%)	35 (35.7%)	98
Male	33 (60.0%)	0 (0.0%)	22 (40.0%)	55
Female	29 (67.4%)	1 (2.3%)	13 (30.2%)	43

Note. Gender: X^2 (2, N = 351) = 1.550, p = .461; Grade Level: X^2 (6, N = 351) = 12.902, p = .045
Gender & Grade Level: X^2 (14, N = 351) = 24.977, p = .035

Class Appropriate: Woodworking

Respondents were provided with a list of technology education courses and asked to determine whether they thought the course was appropriate for boys, for girls, or for all students. Woodworking was one of the eight classes that students were asked to evaluate. More than half of the male respondents (55.6%) and female respondents (53.1%) indicated that they thought the woodworking class was for all students. Table 64 describes the collected data that addresses this question.

A Chi-square analysis revealed that less than half of the male respondents (43.9%) and female respondents (45.3%) indicated that they thought the woodworking course was for boys ($p = .592$). The lowest level of respondents thinking that the course was for all students (44.9%) came from the senior class. The highest percentage of believing the course was for all students (66.3%) was produced by the sophomores ($p = .037$). Freshmen and sophomores demonstrated a higher level of believing that the course was for all students when compared to juniors and seniors.

The smallest percentage of respondents who thought that woodworking was for all students (39.5%) were senior females. Male respondents had a stronger belief that the class was for all students when compared to female respondents at the sophomore and senior grade levels ($p = .147$). Only 4 of 350 students felt that the class was for girls. Senior female respondents had the strongest belief (60.5%) that woodworking was for boys. The woodworking class was considered more appropriate for boys than girls.

Table 64

Class Appropriate: Woodworking

	For Boys	For Girls	For all Students	n
Male	75 (43.9%)	1 (0.6%)	95 (55.6%)	171
Female	81 (45.3%)	3 (1.7%)	95 (53.1%)	179
Freshman	38 (44.7%)	2 (2.4%)	45 (52.9%)	85
Male	17 (44.7%)	1 (2.6%)	20 (52.6%)	38
Female	21 (44.7%)	1 (2.1%)	25 (53.2%)	47
Sophomore	30 (33.7%)	0 (0.0%)	59 (66.3%)	89
Male	12 (29.3%)	0 (0.0%)	29 (70.7%)	41
Female	18 (37.5%)	0 (0.0%)	30 (62.5%)	48
Junior	34 (43.6%)	2 (2.6%)	42 (53.8%)	78
Male	18 (48.6%)	0 (0.0%)	19 (51.4%)	37
Female	16 (39.0%)	2 (4.9%)	23 (56.1%)	41
Senior	54 (55.1%)	0 (0.0%)	44 (44.9%)	98
Male	28 (50.9%)	0 (0.0%)	27 (49.1%)	55
Female	26 (60.5%)	0 (0.0%)	27 (49.1%)	43

Note. Gender: X^2 (2, N = 350) = 1.048, p = .592; Grade Level: X^2 (6, N = 350) = 13.402, p = .037
Gender & Grade Level: X^2 (14, N = 350) = 19.497, p = .147

Class Appropriate: Architectural Design

Respondents were provided with a list of technology education courses and asked to determine whether they thought the course was appropriate for boys, for girls, or for all students. Architectural design was one of the eight classes that students were asked to evaluate. Many of the male respondents (79.1%) and most of the female respondents (84.4%) indicated that they thought the course was for all students. Table 65 describes the collected data that addresses this question.

A Chi-square analysis revealed that some of the male respondents (14.5%) and very few of the female respondents (7.8%) indicated that they thought the architectural design course was for boys ($p = .128$). The lowest level of respondents thinking that the course was for all students (66.3%) came from the freshman class. The highest percentage of believing the course was for all students (89.9%) was produced by the sophomores ($p = .001$). Juniors and seniors demonstrated a higher level of believing that the course was for all students when compared to freshmen and sophomores.

The smallest percentage of students who thought that the architectural design course was for all students (66.0%) were freshman females. Junior and senior female respondents had a stronger belief that the class was for all students when compared to freshmen and sophomore females ($p = .001$). Freshman respondents indicated at approximately equal levels that they perceived architectural design to be a class for girls and boys.

Table 65

Class Appropriate: Architectural Design

	For Boys	For Girls	For all Students	n
Male	25 (14.5%)	11 (6.4%)	136 (79.1%)	172
Female	14 (7.8%)	14 (7.8%)	151 (84.4%)	179
Freshman	13 (15.1%)	16 (18.6%)	57 (66.3%)	86
Male	6 (15.4%)	7 (17.9%)	26 (66.7%)	39
Female	7 (14.9%)	9 (19.1%)	31 (66.0%)	47
Sophomore	6 (6.7%)	3 (3.4%)	80 (89.9%)	89
Male	3 (7.3%)	0 (0.0%)	38 (92.7%)	21
Female	3 (6.3%)	3 (6.3%)	42 (87.5%)	48
Junior	10 (12.8%)	3 (3.8%)	65 (83.3%)	78
Male	7 (18.9%)	2 (5.4%)	28 (75.7%)	37
Female	3 (7.3%)	1 (2.4%)	37 (90.2%)	41
Senior	10 (10.2%)	3 (3.1%)	85 (86.7%)	98
Male	9 (16.4%)	2 (3.6%)	44 (80.0%)	55
Female	1 (2.3%)	1 (2.3%)	41 (95.3%)	43

Note. Gender: X^2 (2, N = 351) = 4.109, p = .128; Grade Level: X^2 (6, N = 351) = 27.731, p = .001
Gender & Grade Level: X^2 (14, N = 351) = 37.223, p = .001

Clean and Organized: Engineering Drafting

Students were asked to select technology education courses that they thought provided a clean and organized place to learn. Engineering drafting was one of the eight classes that students could select. Approximately half of male respondents (46.6%) and less than one third of female respondents (29.9%) indicated that they perceived the engineering drafting course as being a clean and organized place to learn. Table 66 describes the collected data that addresses this question.

A Chi-square analysis revealed that more female respondents (70.1%) than male respondents (53.4%) did not think of the course as being a clean and organized place to learn ($p = .01$). The lowest level of thinking that the engineering drafting course provided a clean and organized environment (16.9%) came from the freshman class, while the highest endorsement for the course (57.3%) was produced by the juniors ($p = .001$).

Female respondents indicated with greater frequency that they did not think of the engineering drafting course as being a clean and organized place to learn when compared with male respondents ($p=.001$). The largest percentage of male respondents who though of the course as being a clean and organized place to learn occurred at the junior level (65.8%). Female respondents showed lower levels of thinking that the engineering drafting course provided a clean and organized environment when compared to male respondents at all grade levels.

Table 66

Clean and Organized: Engineering Drafting

	Checked Yes	Checked No	Not Interested	n
Male	83 (46.6%)	69 (38.8%)	26 (14.6%)	178
Female	55 (29.9%)	102 (55.4%)	27 (14.7%)	184
Freshman	15 (16.9%)	55 (61.8%)	19 (21.3%)	89
Male	7 (17.1%)	26 (63.4%)	8 (19.5%)	41
Female	8 (16.7%)	29 (60.4%)	11 (22.9%)	48
Sophomore	39 (42.9%)	39 (42.9%)	13 (14.3%)	91
Male	25 (59.5%)	11 (26.2%)	6 (14.3%)	42
Female	14 (28.6%)	28 (57.1%)	7 (14.3%)	49
Junior	47 (57.3%)	29 (35.4%)	6 (7.3%)	82
Male	25 (65.8%)	12 (31.6%)	1 (2.6%)	38
Female	22 (50.0%)	17 (38.6%)	5 (11.4%)	44
Senior	37 (37.0%)	48 (48.0%)	15 (15.0%)	100
Male	26 (45.6%)	20 (35.1%)	11 (19.3%)	57
Female	11 (25.6%)	28 (65.1%)	4 (9.3%)	43

Note. Gender: X^2 (2, N = 362) = 11.972, p = .01; Grade Level: X^2 (6, N = 362) = 31.632, p = .001
Gender & Grade Level: X^2 (14, N = 362) = 53.663, p = .001

Clean and Organized: Technology Lab

Students were asked to select technology education courses that they thought provided a clean and organized place to learn. Technology lab was one of the eight classes that students could select. Over half of male respondents (55.6%) and over one third of female respondents (34.2%) indicated that they perceived the technology lab course as being a clean and organized place to learn. Table 67 describes the collected data that addresses this question.

A Chi-square analysis revealed that more female respondents (65.8%) than male respondents (44.4%) did not think of the course as being a clean and organized place to learn ($p = .001$). The lowest level of thinking that the technology lab course provided a clean and organized environment (30.3%) came from the freshman class, while the highest endorsement for the course (61.0%) was produced by the juniors ($p = .01$).

Female respondents indicated with greater frequency that they did not think of the technology lab course as being a clean and organized place to learn when compared with male respondents ($p=.001$). The largest percentage of male respondents who though of the course as being a clean and organized place to learn occurred at the junior level (76.3%). Female respondents showed lower levels of thinking that the technology lab course provided a clean and organized environment when compared to male respondents at all grade levels. Female endorsement for the class increased at the sophomore and junior grade levels before it decreased at the senior level.

Table 67

Clean and Organized: Technology Lab

	Checked Yes	Checked No	Not Interested	n
Male	99 (55.6%)	53 (29.8%)	26 (14.6%)	178
Female	63 (32.4%)	94 (51.4%)	27 (14.7%)	184
Freshman	27 (30.3%)	43 (48.3%)	19 (21.3%)	89
Male	16 (39.0%)	17 (41.5%)	8 (19.5%)	41
Female	11 (22.9%)	26 (54.2%)	11 (22.9%)	48
Sophomore	41 (45.1%)	37 (40.7%)	13 (14.3%)	91
Male	27 (64.3%)	9 (21.4%)	6 (14.3%)	42
Female	14 (28.6%)	28 (57.1%)	7 (14.3%)	49
Junior	50 (61.0%)	26 (31.7%)	6 (7.3%)	82
Male	29 (76.3%)	8 (21.1%)	1 (2.6%)	38
Female	21 (47.7%)	18 (40.9%)	5 (11.4%)	44
Senior	44 (44.0%)	41 (41.0%)	15 (15.0%)	100
Male	27 (27.4%)	19 (33.3%)	11 (19.3%)	57
Female	17 (39.5%)	22 (51.2%)	4 (9.3%)	43

Note. Gender: $X^2(2, N = 362) = 19.360$, $p = .001$; Grade Level: $X^2(6, N = 362) = 17.631$, $p = .01$
Gender & Grade Level: $X^2(14, N = 362) = 44.209$, $p = .001$

Clean and Organized: Photography

Students were asked to select technology education courses that they thought provided a clean and organized place to learn. Photography was one of the eight classes that students could select. Over half of male respondents (55.1%) and over two thirds of female respondents (69.0%) indicated that they perceived the photography course as being a clean and organized place to learn. Table 68 describes the collected data that addresses this question.

A Chi-square analysis revealed that more male respondents (44.9%) than female respondents (31.0%) did not think of the course as being a clean and organized place to learn ($p = .01$). The lowest level of thinking that the photography course provided a clean and organized environment (49.0%) came from the senior class, while the highest endorsement (74.4%) was produced by the juniors ($p = .001$).

Male respondents indicated with greater frequency that they did not think of the photography course as being a clean and organized place to learn when compared with female respondents ($p = .001$). The largest percentage of male respondents who though of the course as being a clean and organized place to learn occurred at the junior level (65.8%). Female respondents showed higher levels of thinking that the photography course provided a clean and organized environment when compared to male respondents at all grade levels. Endorsement for the class was at its lowest level for both genders at the senior level.

Table 68

Clean and Organized: Photography

	Checked Yes	Checked No	Not Interested	n
Male	98 (55.1%)	54 (30.3%)	26 (14.6%)	178
Female	127 (69.0%)	30 (16.3%)	27 (14.7%)	184
Freshman	50 (56.2%)	20 (22.5%)	19 (21.3%)	89
Male	22 (53.7%)	11 (26.8%)	8 (19.5%)	41
Female	28 (58.3%)	9 (18.8%)	11 (22.9%)	48
Sophomore	65 (71.4%)	13 (14.3%)	13 (14.3%)	91
Male	27 (64.3%)	9 (21.4%)	6 (14.3%)	42
Female	38 (77.6%)	4 (8.2%)	7 (14.3%)	49
Junior	61 (74.4%)	15 (18.3%)	6 (7.3%)	82
Male	25 (65.8%)	12 (31.6%)	1 (2.6%)	38
Female	36 (81.8%)	3 (6.8%)	5 (11.4%)	44
Senior	49 (49.0%)	36 (36.0%)	15 (15.0%)	100
Male	24 (42.1%)	22 (38.6%)	11 (19.3%)	57
Female	25 (58.1%)	14 (32.6%)	4 (9.3%)	43

Note. Gender: $X^2 (2, N = 362) = 10.517$, p = .01; Grade Level: $X^2 (6, N = 362) = 23.334$, p = .001
Gender & Grade Level: $X^2 (14, N = 362) = 36.928$, p = .001

Clean and Organized: Metalworking

Students were asked to select technology education courses that they thought provided a clean and organized place to learn. Metalworking was one of the eight classes that students could select. Approximately one third of male respondents (32.6%) and some of the female respondents (21.2%) indicated that they perceived the metalworking course as being a clean and organized place to learn. Table 69 describes the collected data that addresses this question.

A Chi-square analysis revealed that more female respondents (78.8%) than male respondents (67.4%) did not think of the course as being a clean and organized place to learn ($p = .05$). The lowest level of thinking that the metalworking course provided a clean and organized environment (18.0%) came from the freshman class, while the highest endorsement (36.6%) was produced by the juniors ($p = .075$).

Female respondents indicated with greater frequency that they did not think of the metalworking course as being a clean and organized place to learn when compared with male respondents ($p = .05$). The largest percentage of male respondents who though of the course as being a clean and organized place to learn occurred at the junior level (44.7%). Male respondents showed higher levels of thinking that the metalworking course provided a clean and organized environment when compared to female respondents at all grade levels. The lowest levels of endorsement came from freshmen and sophomore female respondents.

Table 69

Clean and Organized: Metalworking

	Checked Yes	Checked No	Not Interested	n
Male	58 (32.6%)	94 (52.8%)	26 (14.6%)	178
Female	39 (21.1%)	118 (64.1%)	27 (14.7%)	184
Freshman	16 (18.0%)	54 (60.7%)	19 (21.3%)	89
Male	8 (19.5%)	25 (61.0%)	8 (19.5%)	41
Female	8 (16.7%)	29 (60.4%)	11 (22.9%)	48
Sophomore	25 (27.5%)	53 (58.2%)	13 (14.3%)	91
Male	18 (42.9%)	18 (42.9%)	6 (14.3%)	42
Female	7 (14.3%)	35 (71.4%)	7 (14.3%)	49
Junior	30 (36.6%)	46 (56.1%)	6 (7.3%)	82
Male	17 (44.7%)	20 (52.6%)	1 (2.6%)	38
Female	13 (29.5%)	26 (59.1%)	5 (11.4%)	44
Senior	26 (26.0%)	59 (59.0%)	15 (15.0%)	100
Male	15 (26.3%)	31 (54.4%)	11 (19.3%)	57
Female	11 (25.6%)	28 (65.1%)	4 (9.3%)	43

Note. Gender: X^2 (2, N = 362) = 6.360, p = .05; Grade Level: X^2 (6, N = 362) = 11.468, p = .075
Gender & Grade Level: X^2 (14, N = 362) = 26.876, p = .05

Clean and Organized: Television and Video Production

Students were asked to select technology education courses that they thought provided a clean and organized place to learn. Television and video production was one of the eight classes that students could select. Over half of male respondents (57.3%) and approximately half of female respondents (48.9%) indicated that they perceived the course as being a clean and organized place to learn. Table 70 describes the collected data that addresses this question.

A Chi-square analysis revealed that a minority of male respondents (42.7%) and over half of the female respondents (51.1%) did not think of the course as being a clean and organized place to learn ($p = .208$). The lowest level of thinking that the television and video production course provided a clean and organized environment (43.8%) came from the freshman class, while the highest endorsement (70.7%) was produced by the juniors ($p = .05$).

Female respondents indicated with greater frequency that they did not think of the course as being a clean and organized place to learn when compared with male respondents at all grade levels with the exception of seniors ($p = .01$). The largest percentage of male respondents who though of the course as being a clean and organized place to learn occurred at the junior level (81.6%). The lowest levels of endorsement for the course came from freshman and sophomore female respondents.

Table 70

Clean and Organized: Television and Video Production

	Checked Yes	Checked No	Not Interested	n
Male	22 (57.3%)	50 (28.1%)	26 (14.6%)	178
Female	90 (48.9%)	67 (36.4%)	27 (14.7%)	184
Freshman	39 (43.8%)	31 (34.8%)	19 (21.3%)	89
Male	20 (48.8%)	13 (31.7%)	8 (19.5%)	41
Female	19 (39.6%)	18 (37.5%)	11 (22.9%)	48
Sophomore	46 (50.5%)	32 (35.2%)	13 (14.3%)	91
Male	27 (64.3%)	9 (21.4%)	6 (14.3%)	42
Female	19 (38.8%)	23 (46.9%)	7 (14.3%)	49
Junior	58 (70.7%)	18 (22.0%)	6 (7.3%)	82
Male	31 (81.6%)	6 (15.8%)	1 (2.6%)	38
Female	27 (61.4%)	12 (27.3%)	5 (11.4%)	44
Senior	49 (49.0%)	36 (36.0%)	15 (15.0%)	100
Male	24 (42.1%)	22 (38.6%)	11 (19.3%)	57
Female	25 (58.1%)	14 (32.6%)	4 (9.3%)	43

Note. Gender: X^2 (2, N = 362) = 3.140, p = .208; Grade Level: X^2 (6, N = 362) = 15.983, p = .05
Gender & Grade Level: X^2 (14, N = 362) = 30.671, p = .01

Clean and Organized: Small Engines

Students were asked to select technology education courses that they thought provided a clean and organized place to learn. Small Engines was one of the eight classes that students could select. Over one third of male respondents (33.7%) and some of the female respondents (21.7%) indicated that they perceived the course as being a clean and organized place to learn. Table 71 describes the collected data that addresses this question.

A Chi-square analysis revealed that more female respondents (78.3%) than male respondents (66.3%) did not think of the course as being a clean and organized place to learn ($p = .05$). The lowest level of thinking that the small engines course provided a clean and organized environment (18.0%) came from the freshman class, while the highest endorsement (42.7%) was produced by the juniors ($p = .01$).

Female respondents indicated with greater frequency that they did not think of the course as being a clean and organized place to learn when compared with male respondents at all grade levels with the exception of seniors ($p = .01$). The largest percentage of male respondents who though of the course as being a clean and organized place to learn occurred at the junior level (52.6%). The lowest levels of endorsement came from freshman and sophomore female respondents.

Table 71

Clean and Organized: Small Engines

	Checked Yes	Checked No	Not Interested	n
Male	60 (33.7%)	92 (51.7%)	26 (14.6%)	178
Female	40 (21.7%)	117 (63.6%)	27 (14.7%)	184
Freshman	16 (18.0%)	54 (60.7%)	19 (21.3%)	89
Male	9 (22.0%)	24 (58.5%)	8 (19.5%)	41
Female	7 (14.6%)	30 (62.5%)	11 (22.9%)	48
Sophomore	26 (28.6%)	52 (57.1%)	13 (14.3%)	91
Male	18 (42.9%)	18 (42.9%)	6 (14.3%)	42
Female	8 (16.3%)	34 (69.4%)	7 (14.3%)	49
Junior	35 (42.7%)	41 (50.0%)	6 (7.3%)	82
Male	20 (52.6%)	17 (44.7%)	1 (2.6%)	38
Female	15 (34.1%)	24 (54.5%)	5 (11.4%)	44
Senior	23 (23.0%)	62 (62.0%)	15 (15.0%)	100
Male	13 (22.8%)	33 (57.9%)	11 (19.3%)	57
Female	10 (23.3%)	29 (67.4%)	4 (9.3%)	43

Note. Gender: X^2 (2, N = 362) = 6.912, p = .05; Grade Level: X^2 (6, N = 362) = 17.952, p = .01
Gender & Grade Level: X^2 (14, N = 362) = 32.782, p = .01

Clean and Organized: Woodworking

Students were asked to select technology education courses that they thought provided a clean and organized place to learn. Woodworking was one of the eight classes that students could select. Approximately one third of male respondents (32.6%) and one quarter of the female respondents (25.0%) indicated that they perceived the course as being a clean and organized place to learn. Table 72 describes the collected data that addresses this question.

A Chi-square analysis revealed that approximately two thirds of male respondents (67.4%) and three quarters of the female respondents (75.0%) did not think of the course as being a clean and organized place to learn ($p = .257$). The lowest level of thinking that the woodworking course provided a clean and organized environment (16.9%) came from the freshman class, while the highest endorsement (42.7%) was produced by the juniors ($p = .01$).

Female respondents indicated with greater frequency that they thought of the woodworking course as being a clean and organized place to learn when compared with male respondents at the freshman and senior grade levels ($p = .01$). The largest percentage of male respondents who though of the course as being a clean and organized place to learn occurred at the junior level (50.0%). The lowest level of endorsement came from freshman male respondents.

Table 72

Clean and Organized: Woodworking

	Checked Yes	Checked No	Not Interested	n
Male	58 (32.6%)	94 (52.8%)	26 (14.6%)	178
Female	46 (25.0%)	111 (60.3%)	27 (14.7%)	184
Freshman	15 (16.9%)	55 (61.8%)	19 (21.3%)	89
Male	6 (14.6%)	27 (65.9%)	8 (19.5%)	41
Female	9 (18.8%)	28 (58.3%)	11 (22.9%)	48
Sophomore	28 (30.8%)	50 (54.9%)	13 (14.3%)	91
Male	20 (47.6%)	16 (38.1%)	6 (14.3%)	42
Female	8 (16.3%)	34 (69.4%)	7 (14.3%)	49
Junior	35 (42.7%)	41 (50.0%)	6 (7.3%)	82
Male	19 (50.0%)	18 (47.4%)	1 (2.6%)	38
Female	16 (36.4%)	23 (52.3%)	5 (11.4%)	44
Senior	26 (26.0%)	59 (59.0%)	15 (15.0%)	100
Male	13 (22.8%)	33 (57.9%)	11 (19.3%)	57
Female	13 (30.2%)	62 (60.5%)	4 (9.3%)	43

Note. Gender: X^2 (2, N = 362) = 2.715, p = .257; Grade Level: X^2 (6, N = 362) = 17.274, p = .01
Gender & Grade Level: X^2 (14, N = 362) = 34.059, p = .01

Clean and Organized: Architectural Design

Students were asked to select technology education courses that they thought provided a clean and organized place to learn. Architectural design was one of the eight classes that students could select. Over half of male respondents (59.0%) and female respondents (55.4%) indicated that they perceived the course as being a clean and organized place to learn. Table 73 describes the collected data that addresses this question.

A Chi-square analysis revealed that a minority of male respondents (41.0%) and female respondents (44.6%) did not think of the course as being a clean and organized place to learn ($p = .744$). The lowest level of thinking that the architectural design course provided a clean and organized environment (44.9%) came from the freshman class, while the highest endorsement (68.3%) was produced by the juniors ($p = .05$).

Female respondents indicated with greater frequency that they did not think of the course as being a clean and organized place to learn when compared with male respondents at all grade levels with the exception of seniors ($p=.05$). The largest percentage of male respondents who though of the course as being a clean and organized place to learn occurred at the junior level (76.3%). The lowest levels of endorsement came from freshman female and senior male respondents. All grade levels had at least a minority of respondents indicate that they thought of the architectural design course as a clean and organized place to learn.

Table 73

Clean and Organized: Architectural Design

	Checked Yes	Checked No	Not Interested	n
Male	105 (59.0%)	47 (26.4%)	26 (14.6%)	178
Female	102 (55.4%)	55 (29.9%)	27 (14.7%)	184
Freshman	40 (44.9%)	30 (33.7%)	19 (21.3%)	89
Male	22 (53.7%)	11 (26.8%)	8 (19.5%)	41
Female	18 (37.5%)	19 (39.6%)	11 (22.9%)	48
Sophomore	59 (64.8%)	19 (20.9%)	13 (14.3%)	91
Male	29 (69.0%)	7 (16.7%)	6 (14.3%)	42
Female	30 (61.2%)	12 (24.5%)	7 (14.3%)	49
Junior	56 (68.3%)	20 (24.4%)	6 (7.3%)	82
Male	29 (76.3%)	8 (21.1%)	1 (2.6%)	38
Female	27 (61.4%)	12 (27.3%)	5 (11.4%)	44
Senior	52 (52.0%)	33 (33.0%)	15 (15.0%)	100
Male	25 (43.9%)	21 (36.8%)	11 (19.3%)	57
Female	27 (62.8%)	12 (27.9%)	4 (9.3%)	43

Note. Gender: X^2 (2, N = 362) = .591, p = .744; Grade Level: X^2 (6, N = 362) = 15.188, p = .05
Gender & Grade Level: X^2 (14, N = 362) = 24.425, p = .05

Safe Environment: Engineering Drafting

Students were asked to select technology education courses that they thought provided a safe place to learn. Engineering drafting was one of the eight classes that students could select. Over half of male respondents (51.1%) and less than one third of female respondents (32.6%) indicated that they perceived the engineering drafting course as being a safe place to learn. Table 74 describes the collected data that addresses this question.

A Chi-square analysis revealed that more female respondents (67.4%) than male respondents (48.9%) did not think of the course as being a safe place to learn ($p = .001$). The lowest level of thinking that the engineering drafting course provided a safe environment (21.3%) came from the freshman class, while the highest endorsement (61.0%) was produced by the juniors ($p = .001$).

Female respondents indicated with greater frequency that they did not think of the engineering drafting course as a safe place to learn when compared with male respondents at all grade levels ($p=.001$). The largest percentage of male respondents who though of the course as a safe place to learn occurred at the junior level (76.3%). Junior and senior female respondents indicated with greater frequency that they thought of the course as a safe place to learn when compared to freshman and sophomore female respondents.

Table 74

Safe Environment: Engineering Drafting

	Checked	Not Checked	Not Interested	n
Male	91 (51.1%)	58 (32.6%)	29 (16.3%)	178
Female	60 (32.6%)	98 (53.3%)	26 (14.1%)	184
Freshman	19 (21.3%)	54 (60.7%)	16 (18.0%)	89
Male	11 (26.8%)	23 (56.1%)	7 (17.1%)	41
Female	8 (16.7%)	31 (64.6%)	9 (18.8%)	48
Sophomore	41 (45.1%)	34 (37.4%)	16 (17.6%)	91
Male	26 (61.9%)	8 (19.0%)	8 (19.0%)	42
Female	15 (30.6%)	26 (53.1%)	8 (16.3%)	49
Junior	50 (61.0%)	26 (31.7%)	6 (7.3%)	82
Male	29 (76.3%)	7 (18.4%)	2 (5.3%)	38
Female	21 (47.7%)	19 (43.2%)	4 (9.1%)	44
Senior	41 (41.0%)	42 (42.0%)	17 (17.0%)	100
Male	25 (43.9%)	20 (35.1%)	12 (21.1%)	57
Female	16 (37.2%)	22 (51.2%)	5 (11.6%)	43

Note. Gender: $X^2 (2, N = 362) = 16.689$, $p = .001$; Grade Level: $X^2 (6, N = 362) = 30.329$, $p = .001$
Gender & Grade Level: $X^2 (14, N = 362) = 53.033$, $p = .001$

Safe Environment: Technology Lab

Students were asked to select technology education courses that they thought provided a safe place to learn. Technology lab was one of the eight classes that students could select. Over half of male respondents (56.7%) and approximately one third of female respondents (36.4%) indicated that they perceived the technology lab course as being a safe place to learn. Table 75 describes the collected data that addresses this question.

A Chi-square analysis revealed that more female respondents (63.6%) than male respondents (43.3%) did not think of the course as being a safe place to learn ($p = .001$). The lowest level of thinking that the technology lab course provided a safe environment (27.0%) came from the freshman class, while the highest endorsement (59.8%) was produced by the juniors ($p = .001$).

Female respondents indicated with greater frequency that they did not think of the technology lab course as a safe place to learn when compared with male respondents at all grade levels ($p=.001$). The largest percentage of male respondents who though of the course as a safe place to learn occurred at the junior level (76.3%). Junior and senior female respondents indicated with greater frequency that they thought of the course as a safe place to learn when compared to freshman and sophomore female respondents.

Table 75

Safe Environment: Technology Lab

	Checked	Not Checked	Not Interested	n
Male	101 (56.7%)	48 (27.0%)	29 (16.3%)	178
Female	67 (36.4%)	91 (49.5%)	26 (14.1%)	184
Freshmen	24 (27.0%)	49 (55.1%)	16 (18.0%)	89
Male	15 (36.6%)	19 (46.3%)	7 (17.1%)	41
Female	9 (18.8%)	30 (62.5%)	9 (18.8%)	48
Sophomore	48 (52.7%)	27 (29.7%)	16 (17.6%)	91
Male	29 (69.0%)	5 (11.9%)	8 (19.0%)	42
Female	19 (38.8%)	22 (44.9%)	8 (16.3%)	49
Junior	49 (59.8%)	27 (32.9%)	6 (7.3%)	82
Male	29 (76.3%)	7 (18.4%)	2 (5.3%)	38
Female	20 (45.5%)	20 (45.5%)	4 (9.1%)	44
Senior	47 (47.0%)	36 (36.0%)	17 (17.0%)	100
Male	28 (49.1%)	17 (29.8%)	12 (21.1%)	57
Female	19 (44.2%)	19 (44.2%)	5 (11.6%)	43

Note. Gender: $X^2(2, N = 362) = 20.253$, p = .001; Grade Level: $X^2(6, N = 362) = 24.577$, p = .001
Gender & Grade Level: $X^2(14, N = 362) = 49.765$, p = .001

Safe Environment: Photography

Students were asked to select technology education courses that they thought provided a safe place to learn. Photography was one of the eight classes that students could select. Over half of male respondents (61.8%) and many female respondents (71.7%) indicated that they perceived the photography course as being a safe place to learn. Table 76 describes the collected data that addresses this question.

A Chi-square analysis revealed that over one third of the male respondents (38.2%) and approximately a quarter of the female respondents (28.3%) did not think of the course as being a safe place to learn ($p = .097$). The lowest level of thinking that the photography course provided a safe environment (57.0%) came from the senior class, while the highest endorsement (79.3%) was produced by the juniors ($p = .01$).

Female respondents indicated with greater frequency that they thought of the photography course as a safe place to learn when compared with male respondents at all grade levels with the exception of freshman ($p = .053$). The largest percentage of male respondents who though of the course as a safe place to learn occurred at the junior level (76.3%). The largest percentage of female respondents (81.8%) who thought of the course as a safe place to learn also occurred at the junior level.

Table 76

Safe Environment: Photography

	Checked	Not Checked	Not Interested	n
Male	110 (61.8%)	39 (21.9%)	29 (16.3%)	178
Female	132 (71.1%)	26 (14.1%)	26 (14.1%)	184
Freshmen	54 (60.7%)	19 (21.3%)	16 (18.0%)	89
Male	25 (61.0%)	9 (22.0%)	7 (17.1%)	41
Female	29 (60.4%)	10 (20.8%)	9 (18.8%)	48
Sophomore	66 (72.5%)	9 (9.9%)	16 (17.6%)	91
Male	28 (66.7%)	6 (14.3%)	8 (19.0%)	42
Female	38 (77.6%)	3 (6.1%)	8 (16.3%)	49
Junior	65 (79.3%)	11 (13.4%)	6 (7.3%)	82
Male	29 (76.3%)	7 (18.4%)	2 (5.3%)	38
Female	36 (81.8%)	4 (9.1%)	4 (9.1%)	44
Senior	57 (57.0%)	26 (26.0%)	17 (17.0%)	100
Male	28 (49.1%)	17 (29.8%)	12 (21.1%)	57
Female	29 (67.4%)	9 (20.9%)	5 (11.6%)	43

Note. Gender: X^2 (2, N = 362) = 4.665, p = .097; Grade Level: X^2 (6, N = 362) = 17.061, p = .01
Gender & Grade Level: X^2 (14, N = 362) = 23.490, p = .053

Safe Environment: Metalworking

Students were asked to select technology education courses that they thought provided a safe place to learn. Metalworking was one of the eight classes that students could select. Over one third of male respondents (34.3%) and some of the female respondents (21.7%) indicated that they perceived the metalworking course as being a safe place to learn. Table 77 describes the collected data that addresses this question.

A Chi-square analysis revealed that more female respondents (78.3%) than male respondents (65.7%) did not think of the course as being a safe place to learn ($p = .05$). The lowest level of thinking that the metalworking course provided a safe environment (16.9%) came from the freshman class, while the highest endorsement (42.7%) was produced by the juniors ($p = .05$).

Female respondents indicated with greater frequency that they did not think of the metalworking course as a safe place to learn when compared with male respondents at all grade levels ($p = .01$). The largest percentage of male respondents who though of the course as a safe place to learn occurred at the junior level (50.0%). The largest percentage of female respondents (36.4%) who thought of the course as a safe place to learn also occurred at the junior level.

Table 77

Safe Environment: Metalworking

	Checked	Not Checked	Not Interested	n
Male	61 (34.3%)	88 (49.4%)	29 (16.3%)	178
Female	40 (21.7%)	118 (64.1%)	26 (14.1%)	184
Freshmen	15 (16.9%)	58 (65.2%)	16 (18.0%)	89
Male	10 (24.4%)	24 (58.5%)	7 (17.1%)	41
Female	5 (10.4%)	34 (70.8%)	9 (18.8%)	48
Sophomore	24 (26.4%)	51 (56.0%)	16 (17.6%)	91
Male	16 (38.1%)	18 (42.9%)	8 (19.0%)	42
Female	8 (16.3%)	33 (67.3%)	8 (16.3%)	49
Junior	35 (42.7%)	41 (50.0%)	6 (7.3%)	82
Male	19 (50.0%)	17 (44.7%)	2 (5.3%)	38
Female	16 (36.4%)	24 (54.5%)	4 (9.1%)	44
Senior	27 (27.0%)	56 (56.0%)	17 (17.0%)	100
Male	16 (28.1%)	29 (50.9%)	12 (21.1%)	57
Female	11 (25.6%)	27 (62.8%)	5 (11.6%)	43

Note. Gender: X^2 (2, N = 362) = 8.802, p = .05; Grade Level: X^2 (6, N = 362) = 16.560, p = .05
Gender & Grade Level: X^2 (14, N = 362) = 29.070, p = .01

Safe Environment: Television and Video Production

Students were asked to select technology education courses that they thought provided a safe place to learn. Television and video production was one of the eight classes that students could select. Over half of the male respondents (60.1%) and female respondents (56.0%) indicated that they perceived the television and video production course as being a safe place to learn. Table 78 describes the collected data that addresses this question.

A Chi-square analysis revealed that a minority of the male respondents (39.9%) and female respondents (44.0%) did not think of the course as being a safe place to learn ($p = .390$). The lowest level of thinking that the television and video production course provided a safe environment (48.3%) came from the freshman class, while the highest endorsement for the course (75.6%) was produced by the juniors ($p = .05$).

Female respondents indicated with greater frequency that they did not think of the course as a safe place to learn when compared with male respondents at all grade levels with the exception of seniors ($p=.05$). The largest percentage of male respondents who though of the course as a safe place to learn occurred at the junior level (78.9%). The largest percentage of female respondents (72.7%) who thought of the course as a safe place to learn also occurred at the junior level.

Table 78

Safe Environment: Television and Video Production

	Checked	Not Checked	Not Interested	n
Male	107 (60.1%)	42 (23.6%)	29 (16.3%)	178
Female	103 (56.0%)	55 (29.9%)	26 (14.1%)	184
Freshmen	43 (48.3%)	30 (33.7%)	16 (18.0%)	89
Male	23 (56.1%)	11 (26.8%)	7 (17.1%)	41
Female	20 (41.7%)	19 (39.6%)	9 (18.8%)	48
Sophomore	50 (54.9%)	25 (27.5%)	16 (17.6%)	91
Male	27 (64.3%)	7 (16.7%)	8 (19.0%)	42
Female	23 (46.9%)	18 (36.7%)	8 (16.3%)	49
Junior	62 (75.6%)	14 (17.1%)	6 (7.3%)	82
Male	30 (78.9%)	6 (15.8%)	2 (5.3%)	38
Female	32 (72.7%)	8 (18.2%)	4 (9.1%)	44
Senior	55 (55.0%)	28 (28.0%)	17 (17.0%)	100
Male	27 (47.4%)	18 (31.6%)	12 (21.1%)	57
Female	28 (65.1%)	10 (23.3%)	5 (11.6%)	43

Note. Gender: X^2 (2, N = 362) = 1.883, p = .390; Grade Level: X^2 (6, N = 362) = 15.032, p = .05
Gender & Grade Level: X^2 (14, N = 362) = 25.665, p = .05

Safe Environment: Small Engines

Students were asked to select technology education courses that they thought provided a safe place to learn. The small engines course was one of the eight classes that students could select. A minority of male respondents (39.9%) and some of the female respondents (23.9%) indicated that they perceived the small engines course as being a safe place to learn. Table 79 describes the collected data that addresses this question.

A Chi-square analysis revealed that more female respondents (76.1%) than male respondents (60.1%) did not think of the course as being a safe place to learn ($p = .001$). The lowest level of thinking that the small engines course provided a safe environment (21.3%) came from the freshman class, while the highest endorsement (46.3%) was produced by the juniors ($p = .05$).

Female respondents indicated with greater frequency that they did not think of the small engines course as a safe place to learn when compared with male respondents at all grade levels ($p = .01$). The largest percentage of male respondents who though of the course as a safe place to learn occurred at the junior level (57.9%). The largest percentage of female respondents (36.4%) who thought of the course as a safe place to learn also occurred at the junior level.

Table 79

Safe Environment: Small Engines

	Checked	Not Checked	Not Interested	n
Male	71 (39.9%)	78 (43.8%)	29 (16.3%)	178
Female	44 (23.9%)	114 (62.0%)	26 (14.1%)	184
Freshmen	19 (21.3%)	54 (60.7%)	16 (18.0%)	89
Male	12 (29.3%)	22 (53.7%)	7 (17.1%)	41
Female	7 (14.6%)	32 (66.7%)	9 (18.8%)	48
Sophomore	25 (27.5%)	50 (54.9%)	16 (17.6%)	91
Male	17 (40.5%)	17 (40.5%)	8 (19.0%)	42
Female	8 (16.3%)	33 (67.3%)	8 (16.3%)	49
Junior	38 (46.3%)	38 (46.3%)	6 (7.3%)	82
Male	22 (57.9%)	14 (36.8%)	2 (5.3%)	38
Female	16 (36.4%)	24 (54.5%)	4 (9.1%)	44
Senior	33 (33.0%)	50 (50.0%)	17 (17.0%)	100
Male	20 (35.1%)	25 (43.9%)	12 (21.1%)	57
Female	13 (30.2%)	25 (58.1%)	5 (11.6%)	43

Note. Gender: X^2 (2, N = 362) = 13.157, p = .001; Grade Level: X^2 (6, N = 362) = 15.367, p = .05
Gender & Grade Level: X^2 (14, N = 362) = 31.890, p = .01

Safe Environment: Woodworking

Students were asked to select technology education courses that they thought provided a safe place to learn. Woodworking was one of the eight classes that students could select. Approximately one third of male respondents (35.4%) and some of the female respondents (25.5%) indicated that they perceived the woodworking course as being a safe place to learn. Table 80 describes the collected data that addresses this question.

A Chi-square analysis revealed that approximately two thirds of the male respondents (64.6%) and many of the female respondents (74.5%) did not think of the course as being a safe place to learn ($p = .062$). The lowest level of thinking that the woodworking course provided a safe environment (23.6%) came from the freshman class, while the highest endorsement (40.2%) was produced by the juniors ($p = .119$).

Female respondents indicated with greater frequency that they did not think of the woodworking course as a safe place to learn when compared with male respondents at all grade levels with the exception of seniors ($p = .164$). The largest percentage of male respondents who though of the course as a safe place to learn occurred at the junior level (47.4%). The largest percentage of female respondents (34.9%) who thought of the course as a safe place to learn occurred at the senior level.

Table 80

Safe Environment: Woodworking

	Checked	Not Checked	Not Interested	n
Male	63 (35.4%)	86 (48.3%)	29 (16.3%)	178
Female	47 (25.5%)	111 (60.3%)	26 (14.1%)	184
Freshmen	21 (23.6%)	52 (58.4%)	16 (18.0%)	89
Male	13 (31.7%)	21 (51.2%)	7 (17.1%)	41
Female	8 (16.7%)	31 (64.6%)	9 (18.8%)	48
Sophomore	23 (25.3%)	52 (57.1%)	16 (17.6%)	91
Male	14 (33.3%)	20 (47.6%)	8 (19.0%)	42
Female	9 (18.4%)	32 (65.3%)	8 (16.3%)	49
Junior	33 (40.2%)	43 (52.4%)	6 (7.3%)	82
Male	18 (47.4%)	18 (47.4%)	2 (5.3%)	38
Female	15 (34.1%)	25 (56.8%)	4 (9.1%)	44
Senior	33 (33.0%)	50 (50.0%)	17 (17.0%)	100
Male	18 (31.6%)	27 (47.4%)	12 (21.1%)	57
Female	15 (34.9%)	23 (53.5%)	5 (11.6%)	43

Note. Gender: $X^2(2, N = 362) = 5.566$, $p = .062$; Grade Level: $X^2(6, N = 362) = 10.144$, $p = .119$
Gender & Grade Level: $X^2(14, N = 362) = 19.038$, $p = .164$

Safe Environment: Architectural Design

Students were asked to select technology education courses that they thought provided a safe place to learn. Architectural design was one of the eight classes that students could select. Approximately two thirds of male respondents (66.3%) and over half of the female respondents (59.8%) indicated that they perceived the architectural design course as being a safe place to learn. Table 81 describes the collected data that addresses this question.

A Chi-square analysis revealed that approximately one third of the male respondents (33.7%) and a minority of the female respondents (40.2%) did not think of the course as being a safe place to learn (p =.135). The lowest level of thinking that the architectural design course provided a safe environment (49.4%) came from the freshman class, while the highest endorsement (74.4%) was produced by the juniors (p =05).

Female respondents indicated with greater frequency that they did not think of the course as a safe place to learn when compared with male respondents at all grade levels with the exception of seniors (p=.060). The largest percentage of male respondents who though of the course as a safe place to learn occurred at the junior level (84.2%). The largest percentage of female respondents (65.9%) who thought of the course as a safe place to learn also occurred at the junior level. The percentages of male and female respondents thinking of the architectural design class as a safe place to learn are increased each year until the senior level. Freshman numbers were the lowest among all grade levels.

Table 81

Safe Environment: Architectural Design

	Checked	Not Checked	Not Interested	n
Male	118 (66.3%)	31 (17.4%)	29 (16.3%)	178
Female	110 (59.8%)	48 (26.1%)	26 (14.1%)	184
Freshmen	44 (49.4%)	29 (32.6%)	16 (18.0%)	89
Male	22 (53.7%)	12 (29.3%)	7 (17.1%)	41
Female	22 (45.8%)	17 (35.4%)	9 (18.8%)	48
Sophomore	61 (67.0%)	14 (15.4%)	16 (17.6%)	91
Male	30 (71.4%)	4 (9.5%)	8 (19.0%)	42
Female	31 (63.3%)	10 (20.4%)	8 (16.3%)	49
Junior	61 (74.4%)	15 (18.3%)	6 (7.3%)	82
Male	32 (84.2%)	4 (10.5%)	2 (5.3%)	38
Female	29 (65.9%)	11 (25.0%)	4 (9.1%)	44
Senior	62 (62.0%)	21 (21.0%)	17 (17.0%)	100
Male	34 (59.6%)	11 (19.3%)	12 (21.1%)	57
Female	28 (65.1%)	10 (23.3%)	5 (11.6%)	43

Note. Gender: X^2 (2, N = 362) = 4.004, p = .135; Grade Level: X^2 (6, N = 362) = 15.848, p = .05
Gender & Grade Level: X^2 (14, N = 362) = 23.028, p = .060

Solve Problems: Engineering Drafting

Respondents were asked to select technology education courses that teach students to solve real world problems. Engineering drafting was one of the eight classes that students could select. A minority of the male respondents (41.0%) and female respondents (37.0%) indicated that they thought the engineering drafting course teaches students to solve real problems. Table 82 describes the collected data that addresses this question.

A Chi-square analysis revealed that over half of the male respondents (59.0%) and female respondents (63.0%) did not think of the course as being a one that teaches students to solve real world problems ($p = .714$). The lowest level of endorsement for the engineering drafting course (29.2%) came from the freshman class, while the highest endorsement for the course (50.0%) was produced by the juniors ($p = .01$).

Female and male respondents indicated similar responses concerning whether or not the engineering course taught students to solve real world problems ($p = .119$). The largest percentage of male respondents who thought that engineering drafting teaches students to solve problems occurred at the junior level (55.3%). Junior and senior respondents indicated with greater frequency that they thought of engineering drafting as a course where students learn to solve real world problems when compared to freshman and sophomore respondents.

Table 82

Solve Problems: Engineering Drafting

	Checked	Not Checked	Not Interested	n
Male	73 (41.0%)	60 (33.7%)	45 (25.3%)	178
Female	68 (37.0%)	68 (37.0%)	48 (26.1%)	184
Freshman	26 (29.2%)	31 (34.8%)	32 (36.0%)	89
Male	14 (34.1%)	13 (31.7%)	14 (34.1%)	41
Female	12 (25.0%)	18 (37.5%)	18 (37.5%)	48
Sophomore	37 (40.7%)	26 (28.6%)	28 (30.8%)	91
Male	17 (40.5%)	10 (23.8%)	15 (35.7%)	42
Female	20 (40.8%)	16 (32.7%)	13 (26.5%)	49
Junior	41 (50.0%)	30 (36.6%)	11 (13.4%)	82
Male	21 (55.3%)	14 (36.8%)	3 (7.9%)	38
Female	20 (45.5%)	16 (36.4%)	8 (18.2%)	44
Senior	37 (37.0%)	41 (41.0%)	22 (22.0%)	100
Male	21 (36.8%)	23 (40.4%)	13 (22.8%)	57
Female	16 (37.2%)	18 (41.9%)	9 (20.9%)	43

Note. Gender: X^2 (2, N = 362) = .675, p = .714; Grade Level: X^2 (6, N = 362) = 16.934, p = .01
Gender & Grade Level: X^2 (14, N = 362) = 20.354, p = .119

Solve Problems: Technology Lab

Respondents were asked to select technology education courses that teach students to solve real world problems. Technology lab was one of the eight classes that students could select. A minority of the male respondents (42.1%) and female respondents (40.2%) indicated that they thought the technology lab course teaches students to solve real problems. Table 83 describes the collected data that addresses this question.

A Chi-square analysis revealed that over half of the male respondents (57.9%) and female respondents (59.8%) did not think of the course as being a one that teaches students to solve real world problems ($p = .934$). The lowest level of endorsement for the technology lab course (31.5%) came from the freshman class, while the highest endorsement (51.2%) was produced by the juniors ($p = .05$).

Female and male respondents indicated similar responses concerning whether or not the technology lab course taught students to solve real world problems ($p = .130$). The largest percentage of male respondents who though of the course as one that teaches students to solve problems occurred at the junior level (55.3%). Nearly half of the female respondents at the sophomore and junior grade levels endorsed the course even though very few have enrolled in technology lab. Freshman females endorsed the course at the lowest percentage (25.0%) among all students.

Table 83

Solve Problems: Technology Lab

	Checked	Not Checked	Not Interested	n
Male	75 (42.1%)	58 (32.6%)	45 (25.3%)	178
Female	74 (40.2%)	62 (33.7%)	48 (26.1%)	184
Freshman	28 (31.5%)	29 (32.6%)	32 (36.0%)	89
Male	16 (39.0%)	11 (26.8%)	14 (24.1%)	41
Female	12 (25.0%)	18 (37.5%)	18 (37.5%)	48
Sophomore	38 (41.8%)	25 (27.5%)	28 (30.8%)	91
Male	15 (35.7%)	12 (28.6%)	15 (35.7%)	42
Female	23 (46.9%)	13 (26.5%)	13 (26.5%)	49
Junior	42 (51.2%)	29 (35.4%)	11 (13.4%)	82
Male	21 (55.3%)	14 (36.8%)	3 (7.9%)	38
Female	21 (47.7%)	15 (34.1%)	8 (18.2%)	44
Senior	41 (41.0%)	37 (37.0%)	22 (22.0%)	100
Male	23 (40.4%)	21 (36.8%)	13 (22.8%)	57
Female	18 (41.9%)	16 (37.2%)	9 (20.9%)	43

Note. Gender: $X^2 (2, N = 362) = .137$, $p = .934$; Grade Level: $X^2 (6, N = 362) = 15.425$, $p = .05$
Gender & Grade Level: $X^2 (14, N = 362) = 20.017$, $p = .130$

Solve Problems: Photography

Respondents were asked to select technology education courses that teach students to solve real world problems. Photography was one of the eight classes that students could select. Some of the male respondents (21.3%) and a quarter of the female respondents (25.0%) indicated that they thought the photography course teaches students to solve real problems. Table 84 describes the collected data that addresses this question.

A Chi-square analysis revealed that many of the male respondents (78.7%) and female respondents (75.0%) did not think of the course as being a one that teaches students to solve real world problems ($p = .639$). The lowest level of endorsement (20.0%) came from the senior class, while the highest endorsement (26.8%) was produced by the juniors ($p = .05$).

Female and male respondents indicated similar responses concerning whether or not the photography course taught students to solve real world problems ($p = .139$). The largest percentage of male respondents (26.2%) and female respondents (29.5%) who though of the course as one that teaches students to solve problems occurred at the junior level. Female respondents indicated with greater frequency that they thought the photography course teaches students to solve real problems when compared with male respondents at all grade levels.

Table 84

Solve Problems: Photography

	Checked	Not Checked	Not Interested	n
Male	38 (21.3%)	95 (53.4%)	45 (25.3%)	178
Female	46 (25.0%)	90 (48.9%)	48 (26.1%)	184
Freshman	18 (20.2%)	39 (43.8%)	32 (36.0%)	89
Male	8 (19.5%)	19 (46.3%)	14 (34.1%)	41
Female	10 (20.8%)	20 (41.7%)	18 (37.5%)	48
Sophomore	24 (26.4%)	39 (42.9%)	28 (30.8%)	91
Male	11 (26.2%)	16 (38.1%)	15 (35.7%)	42
Female	13 (26.5%)	23 (46.9%)	13 (26.5%)	49
Junior	22 (26.8%)	49 (59.8%)	11 (13.4%)	82
Male	9 (23.7%)	26 (68.4%)	3 (7.9%)	38
Female	13 (29.5%)	23 (52.3%)	8 (18.2%)	44
Senior	20 (20.0%)	58 (58.0%)	22 (22.0%)	100
Male	10 (17.5%)	34 (59.6%)	13 (22.8%)	57
Female	10 (23.3%)	24 (55.8%)	9 (20.9%)	43

Note. Gender: X^2 (2, N = 362) = .895, p = .639; Grade Level: X^2 (6, N = 362) = 15.812, p = .05
Gender & Grade Level: X^2 (14, N = 362) = 19.740, p = .139

Solve Problems: Metalworking

Respondents were asked to select technology education courses that teach students to solve real world problems. Metalworking was one of the eight classes that students could select. Approximately one third of the male respondents (36.0%) and some female respondents (26.6%) indicated that they thought the metalworking course teaches students to solve real problems. Table 85 describes the collected data that addresses this question.

A Chi-square analysis revealed that more female respondents (73.4%) than male respondents (64.0%) did not think of the course as being a one that teaches students to solve real world problems ($p = .131$). The lowest level of endorsement (24.7%) came from the freshman class, while the highest endorsement (46.3%) was produced by the juniors ($p = .01$).

Female respondents demonstrated a greater lack of support for the course at all grade levels with the exception of the sophomores ($p = .05$). The largest percentage of male respondents who though of the course as one that teaches students to solve problems occurred at the junior level (57.9%). Junior and senior respondents indicated with greater frequency that they thought of the course as one where students learn to solve real world problems when compared to freshman and sophomore respondents.

Table 85

Solve Problems: Metalworking

	Checked	Not Checked	Not Interested	n
Male	64 (36.0%)	69 (38.8%)	45 (25.3%)	178
Female	49 (26.6%)	87 (47.3%)	48 (26.1%)	184
Freshman	22 (24.7%)	35 (39.3%)	32 (36.0%)	89
Male	13 (31.7%)	14 (34.1%)	14 (34.1%)	41
Female	9 (18.8%)	21 (43.8%)	18 (37.5%)	48
Sophomore	23 (25.3%)	40 (44.0%)	28 (30.8%)	91
Male	10 (23.8%)	17 (40.5%)	15 (35.7%)	42
Female	13 (26.5%)	23 (46.9%)	13 (26.5%)	49
Junior	38 (46.3%)	33 (40.2%)	11 (13.4%)	82
Male	22 (57.9%)	13 (34.2%)	3 (7.9%)	38
Female	16 (36.4%)	20 (45.5%)	8 (18.2%)	44
Senior	30 (30.0%)	48 (48.0%)	22 (22.0%)	100
Male	19 (33.3%)	25 (43.9%)	13 (22.8%)	57
Female	11 (25.6%)	23 (53.5%)	9 (20.9%)	43

Note. Gender: X^2 (2, N = 362) = 4.067, p = .131; Grade Level: X^2 (6, N = 362) = 19.216, p = .01
Gender & Grade Level: X^2 (14, N = 362) = 27.489, p = .05

Solve Problems: Television and Video Production

Respondents were asked to select technology education courses that teach students to solve real world problems. Television and video production was one of the eight classes that students could select. Some of the male respondents (28.7%) and female respondents (28.3%) indicated that they thought the television and video production course teaches students to solve real problems. Table 86 describes the collected data that addresses this question.

A Chi-square analysis revealed that many of the male respondents (71.3%) and female respondents (71.7%) did not think of the course as being a one that teaches students to solve real world problems (p =.985). The lowest level of endorsement (18.7%) came from the sophomore class, while the highest endorsement (40.2%) was produced by the juniors (p =.01).

Male respondents indicated with greater frequency that they thought of the course as one that teaches students to solve real problems when compared to female respondents at all grade levels with the exception of seniors (p=.057). The largest percentage of male respondents who though of the course as one that teaches students to solve problems occurred at the junior level (44.7%). Female endorsement reached its highest level at the senior grade level (37.2%).

Table 86

Solve Problems: Television and Video Production

	Checked	Not Checked	Not Interested	n
Male	51 (28.7%)	82 (46.1%)	45 (25.3%)	178
Female	52 (28.3%)	84 (45.7%)	48 (26.1%)	184
Freshman	22 (24.7%)	35 (39.3%)	32 (36.0%)	89
Male	11 (26.8%)	16 (39.0%)	14 (34.1%)	41
Female	11 (22.9%)	19 (39.6%)	18 (37.5%)	48
Sophomore	17 (18.7%)	46 (50.5%)	28 (30.8%)	91
Male	8 (19.0%)	19 (45.2%)	15 (35.7%)	42
Female	9 (18.4%)	27 (55.1%)	13 (26.5%)	49
Junior	33 (40.2%)	38 (46.3%)	11 (13.4%)	82
Male	17 (44.7%)	18 (47.4%)	3 (7.9%)	38
Female	16 (36.4%)	20 (45.5%)	8 (18.2%)	44
Senior	31 (31.0%)	47 (47.0%)	22 (22.0%)	100
Male	15 (26.3%)	29 (50.9%)	13 (22.8%)	57
Female	16 (37.2%)	18 (41.9%)	9 (20.9%)	43

Note. Gender: $X^2(2, N = 362) = .031$, p = .985; Grade Level: $X^2(6, N = 362) = 18.926$, p = .01
Gender & Grade Level: $X^2(14, N = 362) = 23.218$, p = .057

Solve Problems: Small Engines

Respondents were asked to select technology education courses that teach students to solve real world problems. The small engines course was one of the eight classes that students could select. Over half of the male respondents (52.8%) and a minority of female respondents (40.2%) indicated that they thought the small engines course teaches students to solve real problems. Table 87 describes the collected data that addresses this question.

A Chi-square analysis revealed that more female respondents (59.8%) than male respondents (47.2%) did not think of the course as being a one that teaches students to solve real world problems ($p = .05$). The lowest level of endorsement (30.8%) came from the sophomore class, while the highest endorsement (62.2%) was produced by the juniors ($p = .001$).

Male respondents indicated a greater endorsement for the course when compared to female respondents at all grade levels ($p = .001$). The largest percentage of male respondents who though of the course as one that teaches students to solve problems occurred at the junior level (76.3%). Junior and senior respondents indicated with greater frequency that they thought of the course as one where students learn to solve real world problems when compared to freshman and sophomore respondents.

Table 87

Solve Problems: Small Engines

	Checked	Not Checked	Not Interested	n
Male	94 (52.8%)	39 (21.9%)	45 (25.3%)	178
Female	74 (40.2%)	62 (33.7%)	48 (26.1%)	184
Freshman	38 (42.7%)	19 (21.3%)	32 (36.0%)	89
Male	20 (48.8%)	7 (17.1%)	14 (34.1%)	41
Female	18 (37.5%)	12 (25.0%)	18 (37.5%)	48
Sophomore	28 (30.8%)	35 (38.5%)	28 (30.8%)	91
Male	16 (38.1%)	11 (26.2%)	15 (35.7%)	42
Female	12 (24.5%)	24 (49.0%)	13 (26.5%)	49
Junior	51 (62.2%)	20 (24.4%)	11 (13.4%)	82
Male	29 (76.3%)	6 (15.8%)	3 (7.9%)	38
Female	22 (50.0%)	14 (31.8%)	8 (18.2%)	44
Senior	51 (51.0%)	27 (27.0%)	22 (22.0%)	100
Male	29 (50.9%)	15 (26.3%)	13 (22.8%)	57
Female	22 (51.2%)	12 (27.9%)	9 (20.9%)	43

Note. Gender: X^2 (2, N = 362) = 7.618, p = .05; Grade Level: X^2 (6, N = 362) = 25.220, p = .001
Gender & Grade Level: X^2 (14, N = 362) = 38.092, p = .001

Solve Problems: Woodworking

Respondents were asked to select technology education courses that teach students to solve real world problems. Woodworking was one of the eight classes that students could select. A minority of the male respondents (41.0%) and approximately one quarter of female respondents (27.7%) indicated that they thought the woodworking course teaches students to solve real problems. Table 88 describes the collected data that addresses this question.

A Chi-square analysis revealed that more female respondents (72.3%) than male respondents (59.0%) did not think of the course as being a one that teaches students to solve real world problems ($p = .05$). The lowest level of endorsement (24.7%) came from the freshman class, while the highest endorsement (50.0%) was produced by the juniors ($p = .01$).

Male respondents endorsed the course more frequently than female respondents at every grade level ($p = .01$). The largest percentage of male respondents who though of the course as one that teaches students to solve problems occurred at the junior level (63.2%). Junior and senior respondents indicated with greater frequency that they thought of the course as one where students learn to solve real world problems when compared to freshman and sophomore respondents.

Table 88

Solve Problems: Woodworking

	Checked	Not Checked	Not Interested	n
Male	73 (41.0%)	60 (33.7%)	45 (25.3%)	178
Female	51 (27.7%)	85 (46.2%)	48 (26.1%)	184
Freshman	22 (24.7%)	35 (39.3%)	32 (36.0%)	89
Male	13 (31.7%)	14 (34.1%)	14 (34.1%)	41
Female	9 (18.8%)	21 (43.8%)	18 (37.5%)	48
Sophomore	28 (30.8%)	35 (38.5%)	28 (30.8%)	91
Male	14 (33.3%)	13 (31.0%)	15 (35.7%)	42
Female	14 (28.6%)	22 (44.9%)	13 (26.5%)	49
Junior	41 (50.0%)	30 (36.6%)	11 (13.4%)	82
Male	24 (63.2%)	11 (28.9%)	3 (7.9%)	38
Female	17 (38.6%)	19 (32.2%)	8 (18.2%)	44
Senior	33 (33.0%)	45 (45.0%)	22 (22.0%)	100
Male	22 (38.6%)	22 (38.6%)	13 (22.8%)	57
Female	11 (25.6%)	23 (53.5%)	9 (20.9%)	43

Note. Gender: X^2 (2, N = 362) = 8.213, p = .05; Grade Level: X^2 (6, N = 362) = 19.496, p = .01
Gender & Grade Level: X^2 (14, N = 362) = 31.230, p = .01

Solve Problems: Architectural Design

Respondents were asked to select technology education courses that teach students to solve real world problems. Architectural design was one of the eight classes that students could select. Over one third of the male respondents (38.8%) and female respondents (33.7%) indicated that they thought the architectural design course teaches students to solve real problems. Table 89 describes the collected data that addresses this question.

A Chi-square analysis revealed that over half of the male respondents (61.2%) and approximately two thirds of female respondents (66.3%) did not think of the course as being a one that teaches students to solve real world problems (p =578). The lowest level of endorsement (24.7%) came from the freshman class, while the highest endorsement (43.9%) was produced by the juniors (p =.01).

Male respondents indicated with greater frequency that they thought of the course as one that teaches students to solve real problems when compared to female respondents at all grade levels with the exception of sophomores (p=.05). The largest percentage of male respondents who though of the course as one that teaches students to solve problems occurred at the junior level (52.6%). Female endorsement for the architectural design course declined after sophomore year, while male endorsement for the course increased after sophomore year.

Table 89

Solve Problems: Architectural Design

	Checked	Not Checked	Not Interested	n
Male	69 (38.8%)	64 (36.0%)	45 (25.3%)	178
Female	62 (33.7%)	74 (40.2%)	48 (26.1%)	184
Freshman	22 (24.7%)	35 (39.3%)	32 (36.0%)	89
Male	13 (31.7%)	14 (34.1%)	14 (34.1%)	41
Female	9 (18.8%)	21 (43.8%)	18 (37.5%)	48
Sophomore	36 (39.6%)	27 (29.7%)	28 (30.8%)	91
Male	13 (31.0%)	14 (33.3%)	15 (35.7%)	42
Female	23 (46.9%)	13 (26.5%)	13 (26.5%)	49
Junior	36 (43.9%)	35 (42.7%)	11 (13.4%)	82
Male	20 (52.6%)	15 (39.5%)	3 (7.9%)	38
Female	16 (36.4%)	20 (45.5%)	8 (18.2%)	44
Senior	37 (37.0%)	41 (41.0%)	22 (22.0%)	100
Male	23 (40.4%)	21 (36.8%)	13 (22.8%)	57
Female	14 (32.6%)	20 (46.5%)	9 (20.9%)	43

Note. Gender: X^2 (2, N = 362) = 1.096, p = .578; Grade Level: X^2 (6, N = 362) = 17.195, p = .01
Gender & Grade Level: X^2 (14, N = 362) = 25.035, p = .05

Tinker With Tools: Engineering Drafting

Respondents were asked to select technology education courses that only allow students to tinker with tools and materials. Engineering Drafting was one of the eight classes that students could select. Some of the male respondents (18.6%) and approximately a third of female respondents (30.7%) indicated that they thought the engineering drafting course only allowed students to tinker with tools and materials. Table 90 describes the collected data that addresses this question.

A Chi-square analysis revealed that more male respondents (81.4%) than female respondents (69.3%) thought that the course offered students more than simply tinkering with tools and materials ($p = .05$). The highest level of endorsement (19.8%) came from the senior class, while the lowest endorsement (32.1%) was produced by the juniors ($p = .182$).

Female respondents indicated with greater frequency that they thought the course only allowed students to tinker with tools and materials when compared to male respondents with the exception of seniors ($p = .105$). The highest level of female respondents who thought that the course only allowed students to tinker with tools and materials (39.6%) occurred at the freshman level.

Table 90

Tinker With Tools: Engineering Drafting

	Checked	Not Checked	Not Interested	n
Male	33 (18.6%)	112 (63.3%)	32 (18.1%)	177
Female	55 (30.7%)	92 (51.4%)	32 (17.9%)	179
Freshman	25 (28.1%)	47 (52.8%)	17 (19.1%)	89
Male	6 (14.6%)	27 (65.9%)	8 (19.5%)	41
Female	19 (39.6%)	20 (41.7%)	9 (18.8%)	48
Sophomore	18 (20.0%)	55 (61.1%)	17 (18.9%)	90
Male	7 (16.7%)	27 (64.3%)	8 (19.0%)	42
Female	11 (22.9%)	28 (58.3%)	9 (18.8%)	48
Junior	26 (32.1%)	47 (58.0%)	8 (9.9%)	81
Male	10 (26.3%)	26 (68.4%)	2 (5.3%)	38
Female	16 (37.2%)	21 (48.8%)	6 (14.0%)	43
Senior	19 (19.8%)	55 (57.3%)	22 (22.9%)	96
Male	10 (17.9%)	32 (57.1%)	14 (25.0%)	56
Female	9 (22.5%)	23 (57.5%)	8 (20.0%)	40

Note. Gender: X^2 (2, N = 356) = 7.450, p = .05; Grade Level: X^2 (6, N = 356) = 8.860, p = .182
Gender & Grade Level: X^2 (14, N = 356) = 20.881, p = .105

Tinker With Tools: Technology Lab

Respondents were asked to select technology education courses that only allow students to tinker with tools and materials. Technology lab was one of the eight classes that students could select. Approximately one third of the male respondents (32.8%) and approximately one quarter of female respondents (24.6%) indicated that they thought the technology lab course only allowed students to tinker with tools and materials. Table 91 describes the collected data that addresses this question.

A Chi-square analysis revealed that approximately two thirds of the male respondents (67.2%) and many of female respondents (75.4%) thought that the course offered students more than simply tinkering with tools and materials ($p = .196$). The highest level of endorsement (18.8%) came from the senior class, while the lowest endorsement (39.5%) was produced by the juniors ($p = .069$).

There was not a significant difference between female and male respondents who thought that the technology lab course only provided students with opportunities to tinker with tools and materials ($p = .138$). Male respondents indicated with greater frequency that they thought the course only allowed students to tinker with tools and materials when compared to female respondents at all grade levels. Female respondents demonstrated similar levels of support for the course with male students until senior year.

Table 91

Tinker With Tools: Technology Lab

	Checked	Not Checked	Not Interested	n
Male	58 (32.8%)	87 (49.2%)	32 (18.1%)	177
Female	44 (24.6%)	103 (57.5%)	32 (17.9%)	179
Freshman	25 (28.1%)	47 (52.8%)	17 (19.1%)	89
Male	13 (31.7%)	20 (48.8%)	8 (19.5%)	41
Female	12 (25.0%)	27 (56.3%)	9 (18.8%)	48
Sophomore	27 (30.0%)	46 (51.1%)	17 (18.9%)	90
Male	14 (33.3%)	20 (47.6%)	8 (19.0%)	42
Female	13 (27.1%)	26 (54.2%)	9 (18.8%)	48
Junior	32 (39.5%)	41 (50.6%)	8 (9.9%)	81
Male	16 (42.1%)	20 (52.6%)	2 (5.3%)	38
Female	16 (37.2%)	21 (48.8%)	6 (14.0%)	43
Senior	18 (18.8%)	56 (58.3%)	22 (22.9%)	96
Male	15 (26.8%)	27 (48.2%)	14 (25.0%)	56
Female	3 (7.5%)	29 (72.5%)	8 (20.0%)	43

Note. Gender: $X^2(2, N = 356) = 3.258$, $p = .196$; Grade Level: $X^2(6, N = 356) = 11.696$, $p = .069$
Gender & Grade Level: $X^2(14, N = 356) = 19.770$, $p = .138$

Tinker With Tools: Photography

Respondents were asked to select technology education courses that only allow students to tinker with tools and materials. Photography was one of the eight classes that students could select. Some of the male respondents (21.5%) and approximately one third of female respondents (30.2%) indicated that they thought the photography course only allowed students to tinker with tools and materials. Table 92 describes the collected data that addresses this question.

A Chi-square analysis revealed that many of the male respondents (78.5%) and over two thirds of female respondents (69.8%) thought that the course offered students more than simply tinkering with tools and materials ($p = .153$). The highest level of endorsement (16.7%) came from the senior class, while the lowest endorsement (32.1%) was produced by the juniors ($p = .090$).

There was not a significant difference between female and male respondents who thought that the photography course only provided students with opportunities to tinker with tools and materials ($p = .193$). Female respondents indicated with greater frequency that they thought the course only allowed students to tinker with tools and materials when compared to male respondents at all grade levels with the exception of juniors.

Table 92

Tinker With Tools: Photography

	Checked	Not Checked	Not Interested	n
Male	38 (21.5%)	107 (60.5%)	32 (18.1%)	177
Female	54 (30.2%)	93 (52.0%)	32 (17.9%)	179
Freshman	28 (31.5%)	44 (49.4%)	17 (19.1%)	89
Male	10 (24.4%)	23 (56.1%)	8 (19.5%)	41
Female	18 (37.5%)	21 (43.8%)	9 (18.8%)	48
Sophomore	22 (24.4%)	51 (56.7%)	17 (18.9%)	90
Male	8 (19.0%)	26 (61.9%)	8 (19.0%)	42
Female	14 (29.2%)	25 (52.1%)	9 (18.8%)	48
Junior	26 (32.1%)	47 (58.0%)	8 (9.9%)	81
Male	14 (36.8%)	22 (57.9%)	2 (5.3%)	38
Female	12 (27.9%)	25 (58.1%)	6 (14.0%)	43
Senior	16 (16.7%)	58 (60.4%)	22 (22.9%)	96
Male	6 (10.7%)	36 (64.3%)	14 (25.0%)	56
Female	10 (25.0%)	22 (55.0%)	8 (20.0%)	40

Note. Gender: $X^2(2, N = 356) = 3.751$, $p = .153$; Grade Level: $X^2(6, N = 356) = 10.953$, $p = .090$
Gender & Grade Level: $X^2(14, N = 356) = 18.300$, $p = .193$

Tinker With Tools: Metalworking

Respondents were asked to select technology education courses that only allow students to tinker with tools and materials. Metalworking was one of the eight classes that students could select. Approximately two thirds of the male respondents (64.4%) and female respondents (62.0%) indicated that they thought the metalworking course only allowed students to tinker with tools and materials. Table 93 describes the collected data that addresses this question.

A Chi-square analysis revealed that over one third of the male respondents (35.6%) and female respondents (38.0%) thought that the course offered students more than simply tinkering with tools and materials ($p = .818$). The highest level of endorsement (55.1%) came from the freshman class, while the lowest endorsement (72.2%) was produced by the sophomores ($p = .05$).

Freshman and junior males indicated a higher frequency of thinking that the metalworking course only allowed students to tinker with tools and materials when compared to females. Conversely, sophomore and senior females indicated higher percentages when compared to males ($p = .05$). Male and female students shared a similar point of view toward the metalworking course. Both genders indicated that over half of all respondents thought that the course only allows students to tinker with tools and materials.

Table 93

Tinker With Tools: Metalworking

	Checked	Not Checked	Not Interested	n
Male	114 (64.4%)	31 (17.5%)	32 (18.1%)	177
Female	111 (62.0%)	36 (20.1%)	32 (17.9%)	179
Freshman	49 (55.1%)	23 (25.8%)	17 (19.1%)	89
Male	24 (58.5%)	9 (22.0%)	8 (19.5%)	41
Female	25 (52.1%)	14 (29.2%)	9 (18.8%)	48
Sophomore	65 (72.2%)	8 (8.9%)	17 (18.9%)	90
Male	28 (66.7%)	6 (14.3%)	8 (19.0%)	42
Female	37 (77.1%)	2 (4.2%)	9 (18.8%)	48
Junior	57 (70.4%)	16 (19.8%)	8 (9.9%)	81
Male	32 (84.2%)	4 (10.5%)	2 (5.3%)	38
Female	25 (58.1%)	12 (27.9%)	6 (14.0%)	43
Senior	54 (56.3%)	20 (20.8%)	22 (22.9%)	96
Male	30 (53.6%)	12 (21.4%)	14 (25.0%)	56
Female	24 (60.0%)	8 (20.0%)	8 (20.0%)	40

Note. Gender: X^2 (2, N = 356) = .402, p = .818; Grade Level: X^2 (6, N = 356) = 15.142, p = .05
Gender & Grade Level: X^2 (14, N = 356) = 24.268, p = .05

Tinker With Tools: Television and Video Production

Respondents were asked to select technology education courses that only allow students to tinker with tools and materials. Television and video production was one of the eight classes that students could select. Some of the male respondents (27.1%) and female respondents (25.7%) indicated that they thought the television and video production course only allowed students to tinker with tools and materials. Table 94 describes the collected data that addresses this question.

A Chi-square analysis revealed that many of the male respondents (72.9%) and female respondents (74.3%) thought that the course offered students more than simply tinkering with tools and materials (p =.945). The highest level of endorsement (15.6%) came from the senior class, while the lowest endorsement (37.1%) was produced by the freshman (p =.05).

Sophomore and junior males indicated a higher frequency of thinking that the television and video production course only allowed students to tinker with tools and materials when compared to females. Conversely, freshman and senior females indicated higher percentages when compared to males (p =.161). Both genders indicated that approximately one quarter of all respondents thought that the course only allows students to tinker with tools and materials.

Table 94

Tinker With Tools: Television and Video Production

	Checked	Not Checked	Not Interested	n
Male	48 (27.1%)	97 (54.8%)	32 (18.1%)	177
Female	46 (25.7%)	101 (56.4%)	32 (17.9%)	179
Freshman	33 (37.1%)	39 (43.8%)	17 (19.1%)	89
Male	15 (36.6%)	18 (43.9%)	8 (19.5%)	41
Female	18 (37.5%)	21 (43.8%)	9 (18.8%)	48
Sophomore	21 (23.3%)	52 (57.8%)	17 (18.9%)	90
Male	11 (26.2%)	23 (54.8%)	8 (19.0%)	42
Female	10 (20.8%)	29 (60.4%)	9 (18.8%)	48
Junior	25 (30.9%)	48 (59.3%)	8 (9.9%)	81
Male	14 (36.8%)	22 (57.9%)	2 (5.3%)	38
Female	11 (25.6%)	26 (60.5%)	6 (14.0%)	43
Senior	15 (15.6%)	59 (61.5%)	22 (22.9%)	96
Male	8 (14.3%)	34 (60.7%)	14 (25.0%)	56
Female	7 (17.5%)	25 (62.5%)	8 (20.0%)	40

Note. Gender: X^2 (2, N = 356) = .112, p = .945; Grade Level: X^2 (6, N = 356) = 16.445, p = .012
Gender & Grade Level: X^2 (14, N = 356) = 19.102, p = .161

Tinker With Tools: Small Engines

Respondents were asked to select technology education courses that only allow students to tinker with tools and materials. The small engines course was one of the eight classes that students could select. Over half of the male respondents (60.5%) and female respondents (61.5%) indicated that they thought the small engines course only allowed students to tinker with tools and materials. Table 95 describes the collected data that addresses this question.

A Chi-square analysis revealed that over one third of the male respondents (39.5%) and female respondents (38.5%) thought that the course offered students more than simply tinkering with tools and materials ($p = .978$). The highest level of endorsement (55.2%) came from the senior class, while the lowest endorsement (65.6%) was produced by the sophomores ($p = .279$).

Males respondents indicated a higher frequency of thinking that the small engines course only allowed students to tinker with tools and materials when compared to female respondents at all levels with the exception of sophomores ($p = .168$) . Both genders indicated substantial numbers of respondents who thought that the course only allows students to tinker with tools and materials.

Table 95

Tinker With Tools: Small Engines

	Checked	Not Checked	Not Interested	n
Male	107 (60.5%)	38 (21.5%)	32 (18.1%)	177
Female	110 (61.5%)	37 (20.7%)	32 (17.9%)	179
Freshman	52 (58.4%)	20 (22.5%)	17 (19.1%)	89
Male	24 (58.5%)	9 (22.0%)	8 (19.5%)	41
Female	28 (58.3%)	11 (22.9%)	9 (18.8%)	48
Sophomore	59 (65.6%)	14 (15.6%)	17 (18.9%)	90
Male	23 (54.8%)	11 (26.2%)	8 (19.0%)	42
Female	36 (75.0%)	3 (6.3%)	9 (18.8%)	48
Junior	53 (65.4%)	20 (24.7%)	8 (9.9%)	81
Male	26 (68.4%)	10 (26.3%)	2 (5.3%)	38
Female	27 (62.8%)	10 (23.3%)	6 (14.0%)	43
Senior	53 (55.2%)	21 (21.9%)	22 (22.9%)	96
Male	34 (60.7%)	8 (14.3%)	14 (25.0%)	56
Female	19 (47.5%)	13 (32.5%)	8 (20.0%)	40

Note. Gender: X^2 (2, N = 356) = .044, p = .978; Grade Level: X^2 (6, N = 356) = 7.472, p = .279
Gender & Grade Level: X^2 (14, N = 356) = 18.932, p = .168

Tinker With Tools: Woodworking

Respondents were asked to select technology education courses that only allow students to tinker with tools and materials. The woodworking course was one of the eight classes that students could select. Over half of the male respondents (61.6%) and female respondents (63.1%) indicated that they thought the woodworking course only allowed students to tinker with tools and materials. Table 96 describes the collected data that addresses this question.

A Chi-square analysis revealed that a minority of the male respondents (38.4%) and female respondents (36.9%) thought that the course offered students more than simply tinkering with tools and materials ($p = .943$). The highest level of endorsement (55.2%) came from the senior class, while the lowest endorsement (69.1%) was produced by the juniors ($p = .114$).

Males respondents indicated a higher frequency of thinking that the woodworking course only allowed students to tinker with tools and materials when compared to female respondents at the freshman and junior levels, while the female respondents produced higher percentages at the sophomore and senior grade levels ($p = .351$) . Both genders indicated substantial numbers of respondents who thought that the course only allows students to tinker with tools and materials.

Table 96

Tinker With Tools: Woodworking

	Checked	Not Checked	Not Interested	n
Male	109 (61.6%)	36 (20.3%)	32 (18.1%)	177
Female	113 (63.1%)	34 (19.0%)	32 (17.9%)	179
Freshman	51 (57.3%)	21 (23.6%)	17 (19.1%)	89
Male	25 (61.0%)	8 (19.5%)	8 (19.5%)	41
Female	26 (54.2%)	13 (27.1%)	9 (18.8%)	48
Sophomore	62 (68.9%)	11 (12.2%)	17 (18.9%)	90
Male	27 (64.3%)	7 (16.7%)	8 (19.0%)	42
Female	35 (72.9%)	4 (8.3%)	9 (18.8%)	48
Junior	56 (69.1%)	17 (21.0%)	8 (9.9%)	81
Male	29 (76.3%)	7 (18.4%)	2 (5.3%)	38
Female	27 (62.8%)	10 (23.3%)	6 (14.0%)	43
Senior	53 (55.2%)	21 (21.9%)	22 (22.9%)	96
Male	28 (50.0%)	14 (25.0%)	14 (25.0%)	56
Female	25 (62.5%)	7 (17.5%)	8 (20.0%)	40

Note. Gender: X^2 (2, N = 356) = .118, p = .943; Grade Level: X^2 (6, N = 356) = 10.273, p = .114
Gender & Grade Level: X^2 (14, N = 356) = 15.404, p = .351

Tinker With Tools: Architectural Design

Respondents were asked to select technology education courses that only allow students to tinker with tools and materials. The architectural design course was one of the eight classes that students could select. Some of the male respondents (20.3%) and female respondents (22.9%) indicated that they thought the architectural design course only allowed students to tinker with tools and materials. Table 97 describes the collected data that addresses this question.

A Chi-square analysis revealed that many of the male respondents (79.7%) and female respondents (77.1%) thought that the course offered students more than simply tinkering with tools and materials ($p = .837$). The highest level of endorsement (10.0%) came from the sophomore class, while the lowest endorsement (30.9%) was produced by the juniors ($p = .01$).

Females respondents indicated a higher frequency of thinking that the architectural design course only allowed students to tinker with tools and materials when compared to male respondents at all grade levels with the exception of juniors ($p = .136$). The majority of both genders indicated that the architectural design course provided more than simply having laboratory experiences with tool and materials.

Table 97

Tinker With Tools: Architectural Design

	Checked	Not Checked	Not Interested	n
Male	36 (20.3%)	109 (61.6%)	32 (18.1%)	177
Female	41 (22.9%)	106 (59.2%)	32 (17.9%)	179
Freshman	25 (28.1%)	47 (52.8%)	17 (19.1%)	89
Male	11 (26.8%)	22 (53.7%)	8 (19.5%)	41
Female	14 (29.2%)	25 (52.1%)	9 (18.8%)	48
Sophomore	9 (10.0%)	64 (71.1%)	17 (18.9%)	90
Male	4 (9.5%)	30 (71.4%)	8 (19.0%)	42
Female	5 (10.4%)	34 (70.8%)	9 (18.8%)	48
Junior	25 (30.9%)	48 (59.3%)	8 (9.9%)	81
Male	12 (31.6%)	24 (63.2%)	2 (5.3%)	38
Female	13 (30.2%)	24 (55.8%)	6 (14.0%)	43
Senior	18 (18.8%)	56 (58.3%)	22 (22.9%)	96
Male	9 (16.1%)	33 (58.9%)	14 (25.0%)	56
Female	9 (22.5%)	23 (57.5%)	8 (20.0%)	40

Note. Gender: $X^2(2, N = 356) = .355$, $p = .837$; Grade Level: $X^2(6, N = 356) = 17.915$, $p = .01$
Gender & Grade Level: $X^2(14, N = 356) = 19.820$, $p = .136$

Middle School Experience

Respondents were asked to list whether or not they had enrolled in a technology education course at the middle school level. Many of the male respondents (77.0%) and most of the female respondents (84.8%) indicated that they enrolled in a technology education course at the middle school level. Table 98 describes the collected data that addresses this question.

A Chi-square analysis revealed that some of the male respondents (23.0%) and few of the female respondents (15.2%) had not taken a technology education course at the middle school level (p =.058). The highest percentage of students who had middle school experience (90.1%) came from the sophomore class, while the lowest percentage (74.0%) was produced by the seniors (p =.05).

Females respondents indicated a higher frequency of middle school technology education course enrollment when compared to male respondents at all grade levels with the exception of sophomores (p =.061). Both genders indicated that over three quarters of respondents had taken a technology education course at the middle school level. All students at Richfield Middle School are required to take a technology education course during 7^{th} and 8^{th} grade.

Table 98

Middle School Experience

	Yes	No	Total
Male	137 (77.0%)	41 (23.0%)	178
Female	156 (84.8%)	28 (15.2%)	184
Freshman	71 (79.8%)	18 (20.2%)	89
Male	31 (75.6%)	10 (24.4%)	41
Female	40 (83.3%)	8 (18.8%)	48
Sophomore	82 (90.1%)	9 (9.9%)	91
Male	38 (90.5%)	4 (9.5%)	42
Female	44 (89.8%)	5 (10.2%)	49
Junior	66 (80.5%)	16 (19.5%)	82
Male	27 (71.1%)	11 (28.9%)	38
Female	39 (88.6%)	5 (11.4%)	44
Senior	74 (74.0%)	26 (26.0%)	100
Male	41 (71.9%)	16 (28.1%)	57
Female	33 (76.7%)	10 (23.3%)	43

Note. Gender: X^2 (1, N = 362) = 3.583, p = .058; Grade Level: X^2 (3, N = 362) = 8.171, p = .05
Gender & Grade Level: X^2 (7, N = 362) = 13.487, p = .061

Classes Taken at Richfield Senior High School: Engineering Drafting

Respondents were asked to list whether or not they had enrolled in a technology education course at Richfield Senior High School. Engineering drafting was one of the eight courses that students could select. Very few of the male respondents (4.5%) and female respondents (.5%) indicated that they had enrolled in the engineering drafting course at Richfield Senior High School. Table 99 describes the collected data that addresses this question.

A Chi-square analysis revealed that an overwhelming percentage of the male respondents (95.5%) and female respondents (99.5%) had not taken the engineering drafting course at Richfield Senior High School ($p = .001$). Results according to gender by each grade level were inconclusive due to the extremely low number of respondents who represented various categories concerning the engineering drafting course.

Table 99

Classes Taken at Richfield Senior High School: Engineering Drafting

	Checked	Not Checked	Not Interested	n
Male	8 (4.5%)	111 (62.7%)	58 (32.8%)	177
Female	1 (0.5%)	61 (33.2%)	122 (66.3%)	184
Freshman	0 (0.0%)	32 (36.0%)	57 (64.0%)	89
Male	0 (0.0%)	17 (41.5%)	24 (58.5%)	41
Female	0 (0.0%)	15 (31.3%)	33 (68.8%)	48
Sophomore	4 (4.4%)	42 (46.2%)	45 (49.5%)	91
Male	3 (7.1%)	29 (69.0%)	10 (23.8%)	42
Female	1 (2.0%)	13 (26.5%)	35 (71.4%)	49
Junior	1 (1.2%)	39 (47.6%)	42 (51.2%)	82
Male	1 (2.6%)	27 (71.7%)	10 (26.3%)	38
Female	0 (0.0%)	12 (27.3%)	32 (72.7%)	44
Senior	4 (4.0%)	59 (59.6%)	36 (36.4%)	99
Male	4 (7.1%)	38 (67.9%)	14 (25.0%)	56
Female	0 (0.0%)	21 (48.8%)	22 (51.2%)	43

Note. Gender: X^2 (2, N = 361) = 42.615, p = .001

Classes Taken at Richfield Senior High School: Technology Lab

Respondents were asked to list whether or not they had enrolled in a technology education course at Richfield Senior High School. Technology lab was one of the eight courses that students could select. Some of the male respondents (22.0%) and very few female respondents (5.4%) indicated that they had enrolled in the technology lab course at Richfield Senior High School. Table 100 describes the collected data that addresses this question.

A Chi-square analysis revealed more male respondents than female respondents had taken the technology lab course at Richfield Senior High School ($p = .001$). The highest frequency of enrollment in the course (19.2%) came from the seniors while the lowest frequency (5.6%) was provided by the freshman ($p = .05$).

Male respondents indicated a higher frequency of enrollment in the course when compared to female respondents at all grade levels with the exception of freshman ($p = .001$). Female numbers remained low at all grade levels while male respondent numbers increased after freshman year to approximately one quarter of the population.

Table 100

Classes Taken at Richfield Senior High School: Technology Lab

	Checked	Not Checked	Not Interested	n
Male	39 (22.0%)	80 (45.2%)	58 (32.8%)	177
Female	10 (5.4%)	52 (28.3%)	122 (66.3%)	184
Freshman	5 (5.6%)	27 (30.3%)	57 (64.0%)	89
Male	2 (4.9%)	15 (36.6%)	24 (58.5%)	41
Female	3 (6.3%)	12 (25.0%)	33 (68.8%)	48
Sophomore	13 (14.3%)	33 (36.3%)	45 (49.5%)	91
Male	11 (26.2%)	21 (50.0%)	10 (23.8%)	42
Female	2 (4.1%)	12 (24.5%)	35 (71.4%)	49
Junior	12 (14.6%)	28 (34.1%)	42 (51.2%)	82
Male	10 (26.3%)	18 (47.4%)	10 (26.3%)	38
Female	2 (4.5%)	10 (22.7%)	32 (72.7%)	44
Senior	19 (19.2%)	44 (44.4%)	36 (36.4%)	99
Male	16 (28.6%)	26 (46.4%)	14 (25.0%)	56
Female	3 (7.0%)	18 (41.9%)	22 (51.2%)	43

Note. Gender: X^2 (2, N = 361) = 45.740, p = .001; Grade Level: X^2 (6, N = 361) = 16.554, p = .05
Gender & Grade Level: X^2 (14, N = 361) = 71.462, p = .001

Classes Taken at Richfield Senior High School: Photography

Respondents were asked to list whether or not they had enrolled in a technology education course at Richfield Senior High School. Photography was one of the eight courses that students could select. A few of the male respondents (13.6%) and some of the female respondents (25.0%) indicated that they had enrolled in the photography course at Richfield Senior High School. Table 101 describes the collected data that addresses this question.

A Chi-square analysis revealed that more female respondents than male respondents had taken the photography course at Richfield Senior High School ($p = .001$). The highest frequency of enrollment in the course (25.3%) came from the seniors while the lowest frequency (10.1%) was provided by the freshman ($p = .05$).

Female respondents indicated a higher frequency of enrollment in the course when compared to male respondents at all grade levels ($p = .001$). Male and female enrollment in the photography course increased as grade the grade level increased.

Table 101

Classes Taken at Richfield Senior High School: Photography

	Checked	Not Checked	Not Interested	n
Male	24 (13.6%)	95 (53.7%)	58 (32.8%)	177
Female	46 (25.0%)	16 (8.7%)	122 (66.3%)	184
Freshman	9 (10.1%)	23 (25.8%)	57 (64.0%)	89
Male	0 (0.0%)	17 (41.5%)	24 (58.5%)	41
Female	9 (18.8%)	6 (12.5%)	33 (68.8%)	48
Sophomore	18 (19.8%)	28 (30.8%)	45 (49.5%)	91
Male	6 (14.3%)	26 (61.9%)	10 (23.8%)	42
Female	12 (24.5%)	2 (4.1%)	35 (71.4%)	49
Junior	18 (22.0%)	22 (26.8%)	42 (51.2%)	82
Male	7 (18.4%)	21 (55.3%)	10 (26.3%)	38
Female	11 (25.0%)	1 (2.3%)	32 (72.7%)	44
Senior	25 (25.3%)	38 (38.4%)	36 (36.4%)	99
Male	11 (19.6%)	31 (55.4%)	14 (25.0%)	56
Female	14 (32.6%)	7 (16.3%)	22 (51.2%)	43

Note. Gender: X^2 (2, N = 361) = 85.792, p = .001; Grade Level: X^2 (6, N = 361) = 16.215, p = .05
Gender & Grade Level: X^2 (14, N = 361) = 108.207, p = .001

Classes Taken at Richfield Senior High School: Metalworking

Respondents were asked to list whether or not they had enrolled in a technology education course at Richfield Senior High School. Metalworking was one of the eight courses that students could select. Some of the male respondents (18.1%) and very few female respondents (1.1%) indicated that they had enrolled in the metalworking course at Richfield Senior High School. Table 102 describes the collected data that addresses this question.

A Chi-square analysis revealed that more male respondents than female respondents had taken the metalworking course at Richfield Senior High School ($p = .001$). The highest frequency of enrollment in the course (14.1%) came from the seniors while the lowest frequency (3.4%) was provided by the freshman ($p = .01$).

Male respondents indicated a higher frequency of enrollment in the course when compared to female respondents at all grade levels ($p = .001$). Of the 184 female respondents, 2 indicated that they had enrolled in the metalworking course. Results according to gender by each grade level were inconclusive due to the extremely low number of respondents who represented various categories concerning the metalworking course.

Table 102

Classes Taken at Richfield Senior High School: Metalworking

	Checked	Not Checked	Not Interested	n
Male	32 (18.1%)	87 (49.2%)	58 (32.8%)	177
Female	2 (1.1%)	60 (32.6%)	122 (66.3%)	184
Freshman	3 (3.4%)	29 (32.6%)	57 (64.0%)	89
Male	3 (7.3%)	14 (34.1%)	24 (58.5%)	41
Female	0 (0.0%)	15 (31.3%)	33 (68.8%)	48
Sophomore	10 (11.0%)	36 (39.6%)	45 (49.5%)	91
Male	9 (21.4%)	23 (54.8%)	10 (23.8%)	42
Female	1 (2.0%)	13 (26.5%)	35 (71.4%)	49
Junior	7 (8.5%)	33 (40.2%)	42 (51.2%)	82
Male	6 (15.8%)	22 (57.9%)	10 (26.3%)	38
Female	1 (2.3%)	11 (25.0%)	32 (72.7%)	44
Senior	14 (14.1%)	49 (49.5%)	36 (36.4%)	99
Male	14 (25.0%)	28 (50.0%)	14 (25.0%)	56
Female	0 (0.0%)	21 (48.8%)	22 (51.2%)	43

Note. Gender: X^2 (2, N = 361) = 54.070, p = .001; Grade Level: X^2 (6, N = 361) = 16.702, p = .01

Classes Taken at Richfield Senior High School: Television and Video Production

Respondents were asked to list whether or not they had enrolled in a technology education course at Richfield Senior High School. Television and video production was one of the eight courses that students could select. Very few of the male respondents (2.3%) and female respondents (.5%) indicated that they had enrolled in the television and video production course at Richfield Senior High School. Table 103 describes the collected data that addresses this question.

A Chi-square analysis revealed that an overwhelming percentage of the male respondents (97.7%) and female respondents (99.5%) had not taken the course at Richfield Senior High School ($p = .001$). The highest frequency of enrollment in the course (4.0%) came from the seniors while the lowest frequency (0.0%) was provided by the freshman and sophomores.

The television and video production course is only offered to students of junior or senior status. Results according to gender by each grade level were inconclusive due to the extremely low number of respondents who represented various categories concerning the television and video production course.

Table 103

Classes Taken at Richfield Senior High School: Television and Video Production

	Checked	Not Checked	Not Interested	n
Male	4 (2.3%)	115 (65.0%)	58 (32.8%)	177
Female	1 (0.5%)	61 (33.2%)	122 (66.3%)	184
Freshman	0 (0.0%)	32 (36.0%)	57 (64.0%)	89
Male	0 (0.0%)	17 (41.5%)	24 (58.5%)	41
Female	0 (0.0%)	15 (31.3%)	33 (68.8%)	48
Sophomore	0 (0.0%)	46 (50.5%)	45 (49.5%)	91
Male	0 (0.0%)	32 (76.2%)	10 (23.8%)	42
Female	0 (0.0%)	14 (28.6%)	35 (71.4%)	49
Junior	1 (1.2%)	39 (47.6%)	42 (51.2%)	82
Male	1 (2.6%)	27 (71.1%)	10 (26.3%)	38
Female	0 (0.0%)	12 (27.3%)	32 (72.7%)	44
Senior	4 (4.0%)	59 (59.6%)	36 (36.4%)	99
Male	3 (5.4%)	39 (69.6%)	14 (25.0%)	56
Female	1 (2.3%)	20 (46.5%)	22 (51.2%)	43

Note. Gender: $X^2 (2, N = 361) = 41.003$, $p = .001$

Classes Taken at Richfield Senior High School: Small Engines

Respondents were asked to list whether or not they had enrolled in a technology education course at Richfield Senior High School. The small engines class was one of the eight courses that students could select. Some of the male respondents (19.2%) and very few female respondents (2.7%) indicated that they had enrolled in the small engines course at Richfield Senior High School. Table 104 describes the collected data that addresses this question.

A Chi-square analysis revealed that more male respondents than female respondents had taken the small engines course at Richfield Senior High School ($p = .001$). The highest frequency of enrollment in the course (19.2%) came from the seniors while the lowest frequency (1.1%) was provided by the freshman ($p = .001$). Enrollment in the course increased as grade level also increased.

Male respondents indicated a higher frequency of enrollment in the course when compared to female respondents at all grade levels ($p = .001$). Of the 184 female respondents, only 5 indicated that they had enrolled in the small engines course.

Table 104

Classes Taken at Richfield Senior High School: Small Engines

	Checked	Not Checked	Not Interested	n
Male	34 (19.2%)	85 (48.0%)	58 (32.8%)	177
Female	5 (2.7%)	57 (31.0%)	122 (66.3%)	184
Freshman	1 (1.1%)	31 (34.8%)	57 (64.0%)	89
Male	1 (2.4%)	16 (39.0%)	24 (58.5%)	41
Female	0 (0.0%)	15 (31.3%)	33 (68.8%)	48
Sophomore	9 (9.9%)	37 (40.7%)	45 (49.5%)	91
Male	8 (19.0%)	24 (57.1%)	10 (23.8%)	42
Female	1 (2.0%)	13 (26.5%)	35 (71.4%)	49
Junior	10 (12.2%)	30 (36.6%)	42 (51.2%)	82
Male	6 (15.8%)	22 (57.9%)	10 (26.3%)	38
Female	4 (9.1%)	8 (18.2%)	32 (72.7%)	44
Senior	19 (19.2%)	44 (44.4%)	36 (36.4%)	99
Male	19 (33.9%)	23 (41.1%)	14 (25.0%)	56
Female	0 (0.0%)	21 (48.8%)	22 (51.2%)	43

Note. Gender: X^2 (2, N = 361) = 49.724, p = .001; Grade Level: X^2 (6, N = 361) = 22.940, p = .001
Gender & Grade Level: X^2 (14, N = 361) = 93.052, p = .001

Classes Taken at Richfield Senior High School: Small Woodworking

Respondents were asked to list whether or not they had enrolled in a technology education course at Richfield Senior High School. Woodworking was one of the eight courses that students could select. Some of the male respondents (19.8%) and very few female respondents (4.9%) indicated that they had enrolled in the woodworking course at Richfield Senior High School. Table 105 describes the collected data that addresses this question.

A Chi-square analysis revealed that more male respondents than female respondents had taken the woodworking course at Richfield Senior High School ($p = .001$). The highest frequency of enrollment in the course (21.2%) came from the seniors while the lowest frequency (5.6%) was provided by the freshman ($p = .01$). Enrollment in the course increased as grade level also increased.

Male respondents indicated a higher frequency of enrollment in the course when compared to female respondents at all grade levels ($p = .001$). Of the 184 female respondents, only 9 indicated that they had enrolled in the woodworking course.

Table 105

Classes Taken at Richfield Senior High School: Woodworking

	Checked	Not Checked	Not Interested	n
Male	35 (19.8%)	84 (47.5%)	58 (32.8%)	177
Female	9 (4.9%)	53 (28.8%)	122 (66.3%)	184
Freshman	5 (5.6%)	27 (30.3%)	57 (64.0%)	89
Male	4 (9.8%)	13 (31.7%)	24 (58.5%)	41
Female	1 (2.1%)	14 (29.2%)	33 (68.8%)	48
Sophomore	7 (7.7%)	39 (42.9%)	45 (49.5%)	91
Male	6 (14.3%)	26 (61.9%)	10 (23.8%)	42
Female	1 (2.0%)	13 (26.5%)	35 (71.4%)	49
Junior	11 (13.4%)	29 (35.4%)	42 (51.2%)	82
Male	8 (21.1%)	20 (52.6%)	10 (26.3%)	38
Female	3 (6.8%)	9 (20.5%)	32 (72.7%)	44
Senior	21 (21.2%)	42 (42.4%)	36 (36.4%)	99
Male	17 (30.4%)	25 (44.6%)	14 (25.0%)	56
Female	4 (9.3%)	17 (39.5%)	22 (51.2%)	43

Note. Gender: X^2 (2, N = 361) = 45.015, p = .001; Grade Level: X^2 (6, N = 361) = 21.221, p = .01
Gender & Grade Level: X^2 (14, N = 361) = 73.428, p = .001

Classes Taken at Richfield Senior High School: Architectural Design

Respondents were asked to list whether or not they had enrolled in a technology education course at Richfield Senior High School. Architectural design was one of the eight courses that students could select. Some of the male respondents (22.6%) and few female respondents (8.2%) indicated that they had enrolled in the architectural design course at Richfield Senior High School. Table 106 describes the collected data that addresses this question.

A Chi-square analysis revealed that more male respondents than female respondents had taken the architectural design course at Richfield Senior High School ($p = .001$). The highest frequency of enrollment in the course (17.1%) came from the juniors while the lowest frequency (14.3%) was provided by the sophomores ($p = .01$). Enrollment in the course remained almost constant throughout the grade levels.

Male respondents indicated a higher frequency of enrollment in the course when compared to female respondents at all grade levels ($p = .001$). Of the 184 female respondents, 15 indicated that they had enrolled in the architectural design course. Female enrollment was surprisingly low for the architectural design course.

Table 106

Classes Taken at Richfield Senior High School: Architectural Design

	Checked	Not Checked	Not Interested	n
Male	40 (22.6%)	79 (44.6%)	58 (32.8%)	177
Female	15 (8.2%)	47 (25.5%)	122 (66.3%)	184
Freshman	13 (14.6%)	19 (21.3%)	57 (64.0%)	89
Male	9 (22.0%)	8 (19.5%)	24 (58.5%)	41
Female	4 (8.3%)	11 (22.9%)	33 (68.8%)	48
Sophomore	13 (14.3%)	33 (36.3%)	45 (49.5%)	91
Male	10 (23.8%)	22 (52.4%)	10 (23.8%)	42
Female	3 (6.1%)	11 (22.4%)	35 (71.4%)	49
Junior	14 (17.1%)	26 (31.7%)	42 (51.2%)	82
Male	11 (28.9%)	17 (44.7%)	10 (26.3%)	38
Female	3 (6.8%)	9 (20.5%)	32 (72.7%)	44
Senior	15 (15.2%)	48 (48.5%)	36 (36.4%)	99
Male	10 (17.9%)	32 (57.1%)	14 (25.0%)	56
Female	5 (11.6%)	16 (37.2%)	22 (51.2%)	43

Note. Gender: X^2 (2, N = 361) = 42.126, p = .001; Grade Level: X^2 (6, N = 361) = 17.706, p = .01
Gender & Grade Level: X^2 (14, N = 361) = 67.202, p = .001

Plans After Graduation

Respondents were asked to list what their plans were after they had graduated from high school. Options that students could select included entering the world of work, entering the military, attending a community college, attending a technical college, or enrolling at a 4-year university. Over half of the male respondents (57.9%) and over two thirds of female respondents (67.9%) indicated that they planned on attending a 4-year university after they had completed high school. Table 107 describes the collected data that addresses this question.

A Chi-square analysis revealed that more female respondents than male respondents indicated that they anticipated on enrolling at a 4-year university ($p = .001$). The highest frequency of enrollment at a 4-year university (68.3%) came from the juniors while the lowest frequency (59.0%) was provided by the seniors.

Female respondents indicated a higher frequency of attending a 4-year university when compared to male respondents at all grade levels with the exception of seniors. Results according to gender and each grade level were inconclusive due to the extremely low number of respondents who represented various categories concerning their plans after high school graduation. Very few respondents indicated that they were going to enter the world of work or join the military.

Note. Gender: $X^2 (5, N = 362) = 24.928, p = .001$

Table107

Plans After Graduation

	World of Work	Military Service	Community College	Technical College	4-Year University	Multiple Response	Total
Male	9 (5.1%)	12 (6.7%)	15 (8.4%)	33 (18.5%)	103 (57.9%)	6 (3.4%)	178
Female	6 (3.3%)	1 (0.5%)	32 (17.4%)	15 (8.2%)	125 (67.9%)	5 (2.7%)	184
Freshman	6 (6.7%)	4 (4.5%)	15 (16.9%)	6 (6.7%)	55 (61.8%)	3 (3.4%)	89
Male	2 (4.9%)	4 (9.8%)	4 (9.8%)	4 (9.8%)	25 (61.0%)	2 (4.9%)	41
Female	4 (8.3%)	0 (0.0%)	11 (22.9%)	2 (4.2%)	30 (62.5%)	1 (2.1%)	48
Sophomore	4 (4.4%)	3 (3.3%)	10 (11.0%)	14 (15.4%)	58 (63.7%)	2 (2.2%)	91
Male	3 (7.1%)	3 (7.1%)	5 (11.9%)	10 (23.8%)	20 (47.6%)	1 (2.4%)	42
Female	1 (2.0%)	0 (0.0%)	5 (10.2%)	4 (8.2%)	38 (77.6%)	1 (2.0%)	49
Junior	0 (0.0%)	5 (6.1%)	12 (14.6%)	6 (7.3%)	56 (68.3%)	3 (3.7%)	82
Male	0 (0.0%)	5 (13.2%)	3 (7.9%)	5 (13.2%)	23 (60.5%)	2 (5.3%)	38
Female	0 (0.0%)	0 (0.0%)	9 (20.5%)	1 (2.3%)	33 (75.0%)	1 (2.3%)	44
Senior	5 (5.0%)	1 (1.0%)	10 (10.0%)	22 (22.0%)	59 (59.0%)	3 (3.0%)	100
Male	4 (7.0%)	0 (0.0%)	3 (5.3%)	14 (24.6%)	35 (61.4%)	1 (1.8%)	57
Female	1 (2.3%)	1 (2.3%)	7 (16.3%)	8 (18.6%)	24 (55.8%)	2 (4.7%)	43

Interested in Course/Plans After Graduation

A comparison was made between students who indicated an interest in particular technology education courses and their plans after graduation from high school. Over half of the students interested in technology education courses also indicated that they planned on attending a 4-year university. Some students plan on enrolling at technical and community colleges while very few students plan on entering the military or the world of work.

Students who are not interested in technology education courses most likely plan on attending 4-year universities. A conclusion can be made that Richfield Senior High School and the community is focusing on having students further their education at the university level.

Table 108

Interested in Course/Plans After Graduation

	4 Year University	Technical College	Community College	Military Service	World of Work	Total
Engineering Drafting	37 (54.4%)	16 (23.5%)	6 (8.8%)	4 (5.9%)	1 (1.5%)	68
Technology Lab	44 (54.3%)	17 (21.0%)	6 (7.4%)	4 (4.9%)	5 (6.2%)	81
Photography	129 (66.8%)	23 (11.9%)	21 (10.9%)	5 (2.6%)	9 (4.7%)	193
Metalworking	54 (55.7%)	23 (23.7%)	5 (5.2%)	6 (6.2%)	3 (3.1%)	97
TV/Video Production	117 (65.0%)	21 (11.7%)	23 (12.8%)	7 (3.9%)	5 (2.8%)	180
Small Engines	52 (54.2%)	20 (20.8%)	7 (7.3%)	6 (6.3%)	5 (5.2%)	96
Woodworking	69 (65.1%)	16 (15.1%)	7 (6.6%)	3 (2.8%)	5 (4.7%)	106
Architectural Design	92 (66.2%)	23 (16.5%)	13 (9.4%)	3 (2.2%)	3 (2.2%)	139

Note. Engineering Drafting: $X^2(10, N = 362) = 19.951$, $p = .030$; Technology Lab: $X^2(10, N = 362) = 19.437$, $p = .035$; Photography: $X^2(10, N = 362) = 14.008$, $p = .173$; Metalworking: $X^2(10, N = 362) = 29.875$, $p = .001$; TV/Video Production : $X^2(10, N = 362) = 12.117$, $p = .277$; Small Engines: $X^2(10, N = 362) = 23.026$, $p = .011$; Woodworking: $X^2(10, N = 362) = 14.911$, $p = .135$; Architectural Design: $X^2(10, N = 362) = 15.521$, $p = .114$

Plan on Taking/Plans After Graduation

A comparison was made between students who plan on enrolling in particular technology education courses and their plans after graduation from high school. Over half of the students who plan on enrolling in technology education courses also indicated that they planned on attending a 4-year university. Some students plan on enrolling at technical and community colleges while very few students plan on entering the military or the world of work.

Students who are not planning on enrolling in technology education courses most likely plan on attending 4-year universities. Richfield Senior High School and the community is focusing on having students further their education at the university level.

Table 109

Plan on Taking/Plans After Graduation

	4 Year University	Technical College	Community College	Military Service	World of Work	Total
Engineering Drafting	18 (48.6%)	11 (29.7%)	3 (8.1%)	3 (8.1%)	1 (2.7%)	37
Technology Lab	17 (41.5%)	11 (26.8%)	4 (9.8%)	4 (9.8%)	2 (4.9%)	41
Photography	75 (62.0%)	12 (9.9%)	21 (17.4%)	1 (0.8%)	8 (6.6%)	121
Metalworking	26 (48.1%)	14 (25.9%)	3 (5.6%)	6 (11.1%)	1 (1.9%)	54
TV/Video Production	49 (59.0%)	7 (8.4%)	15 (18.1%)	5 (6.0%)	4 (4.8%)	83
Small Engines	21 (51.2%)	8 (19.5%)	0 (0.0%)	4 (9.8%)	3 (7.3%)	41
Woodworking	33 (57.9%)	11 (19.3%)	3 (5.3%)	1 (1.8%)	4 (7.0%)	57
Architectural Design	46 (62.2%)	13 (17.6%)	9 (12.2%)	2 (2.7%)	2 (2.7%)	74

Note. Engineering Drafting: X^2 (10, N = 362) = 16.903, p = .077; Technology Lab: X^2 (10, N = 362) = 20.520, p = .025; Photography: X^2 (10, N = 362) = 19.877, p = .030; Metalworking: X^2 (10, N = 362) = 31.105, p = .001; TV/Video Production : X^2 (10, N = 362) = 8.161, p = .613; Small Engines: X^2 (10, N = 362) = 30.448, p = .001; Woodworking: X^2 (10, N = 362) = 17.897, p = .05; Architectural Design: X^2 (10, N = 362) = 18.213, p = .089

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Introduction

As we move forward in the 21st century our lives become more dependent on technology. To be a contributing member of society it is essential to be able to use technology to solve problems. Technology education courses teach students how to solve problems, think critically, and develop life long skills necessary for informed decision making in the 21st century. The International Technology Education Association (1996) stated that technology education courses should be made available to all students. Both male and female students must be prepared for a future that will greatly depend on technology. Unfortunately, most female students do not to enroll in elective courses that have the potential to prepare them for the technological world in which we live.

Approximately 1,500 students in grades 9-12 are enrolled at Richfield Senior High School in Richfield, Minnesota. Technology education courses offered include architectural design, technology lab, photography, television and video production, woods, metals, and small engines. Despite the variety of courses that are offered, Richfield Senior High School records reveal that female students have consistently represented only 4% of the student population enrolled in technology education courses. Therefore, there is a need to uncover the factors that influence female students to not enroll in technology education courses.

Problem Statement

We live in a society that is inundated with technology. Projections suggest that the rate of technological developments will continue to increase as we move forward in the 21st century. Educational leaders stress the need for all students to prepare for life in a technological society, which can be accomplished by participation in technology education courses. Unfortunately, most female students do not enroll in these courses.

Research Questions

This study will strive to address the following research questions.

1. What role model, mentors, and peer factors contribute to the reluctance of female students to enroll in technology education courses at Richfield Senior High School?
2. What guidance counselor factors contribute to the reluctance of female students to enroll in technology education courses at Richfield Senior High School?
3. What socialization factors contribute to the reluctance of female students to enroll in technology education courses at Richfield Senior High School?
4. What classroom climate factors contribute to the reluctance of female students to enroll in technology education courses at Richfield Senior High School?
5. What curriculum and instruction factors contribute to the reluctance of female students to enroll in technology education courses at Richfield Senior High School?

Methodology

A review of literature led to the identification of several factors that contribute to the reluctance of female students to enroll in technology education courses. The factors that were identified and used within the questionnaire to measure student responses were: a) sense of self and social fit factors, b) guidance counselor factors, c) role model mentor and peer factors, d) curriculum and instruction factors, e) classroom climate factors.

To obtain a representative sample of the student population, respondents were selected according to English courses. All students are required to enroll in an English course that corresponds to their grade level. Sixteen English classes, 4 each from each grade level were asked to voluntarily complete a questionnaire. The respondents from selected ninth grade (n=104), tenth grade (n=99), eleventh grade (n=92), and twelfth grade (n=105) English classes providing a sample size of 400 students. Students were selected from a core curriculum course as opposed to an elective course in hopes of decreasing respondent bias toward elective technology education courses.

The data for this descriptive research was gathered from a survey that was developed by the author. The instrument addressed each of the five main factors that prevent female students from enrolling in technology education courses as stated in the research questions. English classes from grades 9-12 at Richfield Senior High School were used for this study due to depleted female enrollment numbers in technology education courses.

A chi-square analysis was performed on all collected data, comparing grade levels and male and female students.

Findings

The findings of this study reflect that some significant differences do exist in male and female student interests and perceptions concerning technology education courses at Richfield Senior High School. These results correspond with previous studies that technology education courses are typically biased toward male students.

1. Female students only indicated some interest in courses such as architecture and photography. This study also found that many female students lack support from role models, mentors, and peers concerning enrollment in technology education courses. Many students, especially females would not enroll in a technology education course unless a friend also signed up. The majority of male respondents indicated parental support for technology education courses, while an overwhelming percentage of female respondents demonstrated a lack of parental

support. Almost all female students indicated a lack of knowledge concerning female role models in the field of technology

2. The results of this study indicate that both male and female students lack encouragement from guidance counselors to enroll in technology education courses. However, female students received less encouragement and information regarding technology education courses at Richfield Senior High School from guidance counselors when compared to male students. RHS attempts to direct students in the direction of a university education, thus focusing on core curriculum and advanced placement courses as opposed to electives such as technology education.
3. With the exception of photography and architectural design, female students indicated a fear of being the only member of their gender in various technology education courses. The majority of male students indicated that they expected the technology education courses to be composed of primarily male students. Very few respondents indicated that they believed any of the technology education courses to be appropriate for females to enroll in. Many students thought that the technology education courses at Richfield Senior High School were reserved for males or for all students.
4. The majority of female respondents indicated that they thought of most technology education labs as dangerous and dirty places to learn. Female students also indicated that they perceived the photography and architectural design labs to be the least threatening technology education learning environments. Almost all female students thought of metalworking, woodworking, and small engines as dirty and dangerous environments even though very few of them have ever seen the laboratories.

5. Male and female students indicated a similar perception of various technology education courses being environments where students solve real world problems. Male and female respondents also indicated a similar belief toward which technology education courses only allow students to tinker with tools and materials. Students indicated that courses such as small engines, metalworking, and woodworking did not solve real world problems and only allowed students to tinker with tools and materials. Respondents indicated that the engineering drafting and architectural design courses solve real problems.
6. The percentage of female students who enrolled in a technology education course at the middle school level was higher than that of the males. All technology education courses besides photography were dominated by the male population. A majority of students at all grade levels indicated that they planned on attending a 4-year university after graduation from high school. Some students were going to pursue community and technical college educations, while very few respondents planned on starting work or entering the military.

Conclusions

Based on the findings of this study, the following conclusions can be made.

1. The majority of technology education courses provided at Richfield Senior High School are viewed as non-traditional for female students. In order for female students to overcome this challenge, they must have support from their parents, peers, and female role models. The findings of this research demonstrate that females are less likely to enroll in a non-traditional course if they do not have the support of individuals who have a strong impact on their personal and future decisions.
2. Guidance office staff presented little if any information concerning technology education courses to students at Richfield Senior High School. Female students were provided with less

information than male students from their guidance counselors about technology education courses, thus contributing to low female enrollment numbers.

3. The majority of technology education classrooms and labs at Richfield Senior High School are filled with an overwhelming percentage of male students. Technology education courses have been historically dominated by male students with the exception of courses such as photography and architectural design. The findings of this research demonstrate that females feel like non-conformists when they enroll in courses that are traditionally reserved for male students.
4. Some technology education laboratories at Richfield Senior High School are perceived to be dirty and dangerous by the majority of female students. In order for females to overcome their fear of the environment, various labs and classrooms need to be converted into gender neutral and less threatening learning areas. The findings of this research demonstrate that females may be interested technology education courses but may have second thoughts after being in the actual environment with machines and materials.
5. Female students do not perceive technology education courses to be primers for future education or career opportunities. Female respondents indicated that they did not think that the majority of the technology education course offerings taught students to solve real world problems. The findings demonstrate that female students perceive technology education courses as industrial arts environments that would not challenge a college bound student.
6. An overwhelming percentage of students have not been informed or have not considered technology education courses to be preparation for further education. Students who want to pursue a university education are influenced to enroll in core curriculum courses such as math and science. The findings of this study demonstrate that the majority of students at Richfield

Senior High School are pointed in the direction of a 4-year university without exploring other educational and career opportunities.

Recommendations

Based on the findings of this study, the following recommendations are made.

1. Technology education teachers need to invite successful women from various technological fields to visit and speak to their classes, discussing preparation and training needed to pursue various technological careers. Schools must also develop career days or programs that are designated to allow students access to women in non-traditional occupations. Schools need to provide students with the opportunity to participate in job shadowing or work experiences. Local businesses and employers must establish a program with school districts that would allow girls and young women to meet successful women and learn information concerning technological careers. Schools need to encourage team teaching strategies amongst technology education teachers and female teachers in related disciplines such as math and science. Finally, technology education teachers need to review curriculum to ensure that it displays women participating and assuming leadership positions in technological careers.
2. Links need to be established between middle school and high school guidance programs, including meetings with technology education teachers to learn more about the importance of their classes. Guidance counselors need to also schedule presentations by high school teachers at both the middle school and high school levels to inform students and staff about the relevance and necessity of their programs. Technology education teachers must provide more information to both students and parents pertaining to preparation essential for the pursuit of various technical careers. Technology teachers need to also give guidance office staff examples of student work and learning activities to share with students who are

registering for classes or want information about technology education courses.

3. Young women frequently make choices similar to those of their peers. Thus, it is significant for technology education to generate interest for both female students and their friends. Peer support and participation in technology education courses will allow for young women to feel more confident within a technology education environment. To interest female students in pursuing technology education courses, it is necessary to dismiss "shop class" stereotypes. Technology education laboratories and classrooms need to be clean, organized, painted appropriately, and display images of women in technological endeavors. Technology education courses are perceived to be reserved for male students. To increase participation of female students in the study of technology, it is essential to implement portions of technology that represent the feminine perspective of technology. Topics and activities relating to aesthetics, ergonomics, and architecture may increase female student interest and enrollment.
4. When communicating with students and professional staff use language that is gender neutral. Refrain from using references such as man-made or calling on male students by their last name. Also maintain a classroom of mutual respect amongst all students and professional staff. Develop clear rules and consequences concerning behavior, language, and disrespect. Make it a priority to keep laboratories clean and well organized. If necessary, repaint and discard old non-used equipment and materials to create a more welcoming and respectful environment for all students. Finally, display graphic representations of women using technology to solve problems. Simple posters can interest young women and allow them to feel as though they are capable of being successful in technology education courses. Providing images of women in technology will create a more welcoming environment for female students, and may contribute to the dismissal of male stereotypes.

5. Teachers need to review curriculum to assure that course objectives and learning experiences are directed toward both male and female students. Textbooks that are old or biased toward male attitudes and perspectives need to be replaced with more gender-neutral materials. Examples and terminology that are used in technology education courses typically reflect male viewpoints. Teachers need to use examples that are understood and unbiased to both male and female students. Female students are interested in aesthetics and detail-oriented characteristics. When implementing learning activities, allow for student creativity and require aesthetic qualities to be evident on finished products. Encourage students to work with partners to solve problems and achieve common goals. This will ease female tension and increase their ability to complete quality work.
6. Technology education courses need to show their connection with other core disciplines such as math and science to attract students who plan on pursuing a university education. Technology education and core curriculum teachers need to team teach to provide students with not only essential information, but also the practical hands-on experiences that technology education labs can provide. Technology education environments must also look professional and be supplied with updated tools and curriculum. Technology education course offerings such as engineering drafting and architectural design must be heavily marketed within Richfield Senior High School to attract university bound students.

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APPENDIX A

Student Questionnaire

Please respond to the following questions to the best of your ability. Your thoughtful responses will contribute to improving the industrial technology program at Richfield Senior High School.

1. It is important that students have a variety of elective classes to choose from while they are in high school. Place (X's) beside the elective classes that **you would be interested in taking?**

____	Engineering Drafting	____	Small Engines
____	Technology Lab	____	Woodworking
____	Photography	____	Architectural Design
____	Metalworking	____	I am not interested in any of these classes
____	Television and Video Production		

2. As a student it is vital to plan which classes you are going to enroll in each semester. Place (X's) beside the elective classes that **you plan on taking in the future.**

____	Engineering Drafting	____	Small Engines
____	Technology Lab	____	Woodworking
____	Photography	____	Architectural Design
____	Metalworking	____	I do not plan on taking any of these classes
____	Television and Video Production		

3. Parents often get excited about elective classes that their children can enroll in. Place (X's) beside the classes that **your parents would get excited about.**

____	Engineering Drafting	____	Small Engines
____	Technology Lab	____	Woodworking
____	Photography	____	Architectural Design
____	Metalworking	____	None of these elective classes would excite my parents
____	Television and Video Production		

4. It is often fun to take a class that one or more of your friends are in. Place (X's) beside classes that you would enroll in **only if a friend would also sign up for the class.**

____	Engineering Drafting	____	Small Engines
____	Technology Lab	____	Woodworking
____	Photography	____	Architectural Design
____	Metalworking	____	I am not interested in any of these classes
____	Television and Video Production		

5. The guidance office provides students with information about potential occupations based on their interests and abilities. Place (X's) beside classes that the guidance office has encouraged you to consider taking **based on your interests and abilities.**

____	Engineering Drafting	____	Small Engines
____	Technology Lab	____	Woodworking
____	Photography	____	Architectural Design
____	Metalworking	____	I have not been encouraged to enroll in any of these classes
____	Television and Video Production		

6. The guidance office encourages students to prepare for further education (technical school or university). Place (X's) beside classes that the guidance office has told you **will prepare you for further education.**

____	Engineering Drafting	____	Small Engines
____	Technology Lab	____	Woodworking
____	Photography	____	Architectural Design
____	Metalworking	____	I have not been told about any of these classes
____	Television and Video Production		

7. It is hard for a student to enroll in a course if they think they will be the only boy or girl in the class. Place (X's) beside classes where **you might be the only boy or girl.**

____	Engineering Drafting	____	Small Engines
____	Technology Lab	____	Woodworking
____	Photography	____	Architectural Design
____	Metalworking	____	I might be the only boy or girl in all of these classes.
____	Television and Video Production		

8. Some people say that there are certain classes for boys and certain classes for girls.
Place (B's) beside classes that you feel are **appropriate for boys**.
Place (G's) beside classes that you feel are **appropriate for girls**.
Place (A's) beside classes that you feel are **appropriate for all students**.

____	Engineering Drafting	____	Small Engines
____	Technology Lab	____	Woodworking
____	Photography	____	Architectural Design
____	Metalworking	____	I do not think any of these classes are for all students
____	Television and Video Production		

9. It is important that classrooms and laboratories are inviting places for students to learn. Place (X's) beside classes that you feel provide students with a **clean, organized, and pleasant place to learn**.

____	Engineering Drafting	____	Small Engines
____	Technology Lab	____	Woodworking
____	Photography	____	Architectural Design
____	Metalworking	____	None of these classes provide an inviting place to learn
____	Television and Video Production		

10. Safety is a main issue when a student is in a classroom or a laboratory. Place (X's) beside classes that you think **provide a safe place to learn.**

____	Engineering Drafting	____	Small Engines
____	Technology Lab	____	Woodworking
____	Photography	____	Architectural Design
____	Metalworking	____	I would be afraid of getting hurt in all of these classes.
____	Television and Video Production		

11. Some classes in high school "take on" subjects that address problems in the real world. Place (X's) beside classes that you feel **teach students to solve real problems**.

____	Engineering Drafting	____	Small Engines
____	Technology Lab	____	Woodworking
____	Photography	____	Architectural Design
____	Metalworking	____	I do not think any of these address real world problems.
____	Television and Video Production		

12. Some classes teach you to solve problems while others allow you to tinker with tools and materials. Place (X's) beside classes that you think **only allow students to tinker with tools and materials.**

____	Engineering Drafting	____	Small Engines
____	Technology Lab	____	Woodworking
____	Photography	____	Architectural Design
____	Metalworking	____	None of these classes focus on using tools and materials.
____	Television and Video Production		

13. What is your gender? (check one) ____ Female ____ Male

14. What is your current grade level? (check one)
    ____ Freshmen ____Sophomore ____ Junior ____ Senior

15. Did you take an industrial technology class in middle school? (check one)

    ____Yes ____No

16. Place a (X) beside the classes that you have taken at Richfield Senior High School.

____	Engineering Drafting	____	Small Engines
____	Technology Lab	____	Woodworking
____	Photography	____	Architectural Design
____	Metalworking	____	I have not taken any of these classes
____	Television and Video Production		

17. What are your plans once you graduate from high school? (check one)

- ____ Enter the world of work
- ____ Enroll in military service
- ____ Attend a local community college
- ____ Attend a local technical college
- ____ Attend a 4-year university

Thank you for taking the time to complete this survey.

APPENDIX B

Dear Parent/Guardian,

The purpose of this letter is to obtain your permission for your son/daughter to participate in research that I am conducting. I am a teacher at Richfield Senior High School who is interested in the ideas that students have about selecting classes during their high school career. With my colleagues permission I will be visiting classrooms and having students complete a simple questionnaire. All students who participate will be anonymous.

Participation in this simple inquiry is voluntary; however student involvement will contribute to improving course offerings. Please sign and date the spaces below and have your student return this form so they can participate in this beneficial research project. If you would like any additional information please reference the back of this page. Thank you for your time and commitment to Richfield Senior High School.

Sincerely

William Waite

I will/will not (circle one) allow my student_____________(student's name) to participate in this study.

Parent/Guardian Signature:______________________ Date:_________

APPENDIX C

William Waite, a teacher at Richfield Senior High School, working on his Master's Degree through the University of Wisconsin-Stout is conducting a research project with students, grades 9-12. I would appreciate your son's/daughter's participation in this study. With your permission, they will be asked to complete a questionnaire. It will be handed out on January, 8th 2003 in their third hour class at Richfield Senior High School. This signed form should be returned in a timely manner to allow for data analysis to begin. Students will not be writing their names on the questionnaire.

This study will not present any medical or social risk to your child. The information gathered will be kept strictly confidential and any reports of the findings will not contain your child's name or any other identifying information.

Your child's participation is completely voluntary. You may choose not to have your son/daughter participate without any adverse consequences to him/her. However, your son's/daughter's participation will contribute to the improvement of course offerings at Richfield Senior High School.

Questions or concerns regarding participation in this research or subsequent complaints should be addressed to the researcher William Waite (612) 798-6179, or to research advisor Dr. Kenneth Welty (715) 232-1206. Questions about the rights of research subjects can be addressed to Sue Foxwell (715) 232-1126, Human Protections Administrator, University of Wisconsin-Stout Institutional Review Board for the Protection of Human Subjects in Research, 11 Harvey Hall, Menomonie, WI 54751.

Consent Form

I understand that my child's participation in this study is strictly voluntary and he/she may discontinue participation at any time without prejudice.

I understand that the purpose of this study is to investigate factors that prevent students from enrolling in Industrial Technology courses at Richfield Senior High School. A copy of the questionnaire will be located in the main office for you to view.

I further understand that any information about my son/daughter that is collected during this study will be held in the strictest confidence and will not be a part of his/her permanent record.

I attest that I have read and understand the above description, and that all questions about the study have been answered to my satisfaction. I hereby give my informed consent to participate in this study.

APPENDIX D

My name is Mr. Waite and I am a Technology Education teacher here at Richfield Senior High School. I am currently in the process of finishing my master's degree from the University of Wisconsin-Stout in technology education. To complete this degree I am required to do research that is related to my field of study. The purpose of my study is to determine why students enroll in particular elective courses. Participation in this research study is voluntary however I would greatly appreciate you involvement. Your responses must remain anonymous so please do not put your name on the questionnaire. When you are finished please place the completed questionnaire in the folder that I will provide. If you complete the questionnaire early, please remain quiet until all students are finished. What questions do you have concerning this research project?

Thank you for your thoughtful responses. If you are interested in the results of this study please stop by room 138.

APPENDIX E

The following individuals contributed to this study by reviewing and evaluating the content and design of instrument that was used.

Dr. Kenneth Welty, University of Wisconsin-Stout

Dr. Brian McAlister, University of Wisconsin-Stout

Dr. Jill Johnson, Richfield Public Schools

Mr. Bruce Wiebe, Richfield Senior High School